



November 24, 1999

Southern Division Naval Facilities Engineering Command P.O. Box 190010 2155 Eagle Dr. North Charleston, SC 29419-9010

ATTN:

Ms. Barbara Nwokike, Code 187300

Subject:

BRAC Environmental Site Screening Reports

Study Areas 23 and 42

NTC, Orlando

Contract: N62467-89-D-0317

Dear Barbara:

Enclosed are two copies each of the final BRAC Environmental Site Screening Reports for Study Areas 23 and 42. These reports were approved by the BCT during the November OPT meeting in Orlando. We have also transmitted copies of the report to the normal distribution list for final documents.

Should you have any questions or need additional information, please call me at (904) 772-7688.

Very Truly Yours,

Harding Lawson Associates

Sichal Palle

Richard P. Allen

Project Technical Lead

Attachment

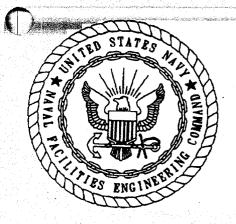
cc:

Wayne Hansel, SOUTHNAVFACENGCOM (4 copies)
Nancy Rodriguez, USEPA Region IV (2 copies)
David Grabka, FDEP (2 copies)
Steve McCoy, Tetra Tech NUS (1 copy)
Al Aikens, CH2M Hill (1 copy)

John Kaiser (2 copies)

Environmental Services





BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORT STUDY AREA 42

NAVAL TRAINING CENTER ORLANDO, FLORIDA

UNIT IDENTIFICATION CODE: N65928 CONTRACT NO.: N62467-89-D-0317/107

NOVEMBER 1999



SOUTHERN DIVISION NAVAL FACILITIES ENGINEERING COMMAND NORTH CHARLESTON, SOUTH CAROLINA 29418



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BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORT

STUDY AREA 42

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Unit Identification Code: N65928

Contract No.: N62467-89-D-0317/107

Prepared by:

Harding Lawson Associates 2590 Executive Center Circle, East Tallahassee, Florida 32301

Prepared for:

Department of the Navy, Southern Division Naval Facilities Engineering Command 2155 Eagle Drive North Charleston, South Carolina 29418

Barbara Nwokike, Code 1873, Engineer-in-Charge

November 1999



CERTIFICATION OF TECHNICAL DATA CONFORMITY (MAY 1987)

The Contractor, Harding Lawson Associates (formerly ABB Environmental Services, Inc.), hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/107 are complete and accurate and comply with all requirements of this contract.

DATE:	November	23,	1999	
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NAME AND TITLE OF CERTIFYING OFFICIAL:

John Kaiser

Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL:

Richard Allen

Project Technical Lead

(DFAR 252.227-7036)

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GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
bls	below land surface
CLP	Contract Laboratory Program
DQO	data quality objective
FDEP FGGC	Florida Department of Environmental Protection Florida groundwater guidance concentration
HLA	Harding Lawson Associates
MCL μg/kg	maximum contaminant level micrograms per kilogram
NTC	Naval Training Center
OPT	Orlando Partnering Team
PCB	polychlorinated biphenyl
RBC	risk-based concentration
SA SCG SVOC	study area soil cleanup goal semivolatile organic compound
TAL TGL TPH	target analyte list target compound list total petroleum hydrocarbons
USEPA	U.S. Environmental Protection Agency

1.0 STUDY AREA 42, BUILDING 2055, AIR CONDITIONER AND VENDING MACHINE MAINTENANCE

This report contains information gathered during site screening activities conducted at Study Area (SA) 42 by Harding Lawson Associates (HLA) (formerly ABB Environmental Services, Inc. [ABB-ES]). Initial site screening investigations proposed in the Site Screening Plan (ABB-ES, 1995) were conducted between June 24 and November 6, 1997. Additional site activities were conducted on February 26, 1998, in response to data collected during the initial screening events. The site screening investigation resulted in the recommendation and implementation of a limited soil removal at the site.

- 1.1 BACKGROUND AND CONDITIONS. SA 42 is located south of Iwo Jima Street and west of Leahy Avenue on the Main Base of the Naval Training Center (NTC), Orlando, Florida (Figure 1). Buildings 2055 and 2056 were built in 1943, and were used at least since 1945 as classrooms. Drawings of the buildings indicate that both included laboratory facilities. In 1969, the two buildings were connected by an addition, and the western half was renumbered as part of Building 2055. Most recently, the eastern half of the building has been occupied by the Morale, Welfare, and Recreation office and used for vending machine maintenance. The western half of the building contains the NTC, Orlando, air conditioning maintenance contractor mechanical shops, administrative offices, and storage rooms. Additional details can be found in the Site Screening Plan (ABB-ES, 1995).
- 1.2 SAMPLING RATIONALE. Areas of environmental interest at the site include flammable storage areas at the northwest and southeast (locker removed) corners of the building, an air conditioner pad on the east end of the building where stained concrete was observed, and the concrete sumps on the north side of the building. Sinks in the laboratories may have been connected to the concrete sumps located on the north side of the buildings.
- 1.3 INITIAL SITE SCREENING INVESTIGATION SUMMARY. The site screening investigation was intended to evaluate the potential for release of contaminants to environmental media due to past site practices. Historical site activities and current site conditions were used to determine sampling locations.
- 1.3.1 Sampling Program Based on the rationale presented in the Site Screening Plan (ABB-ES, 1995), samples were collected near each of the flammable storage locations, the two concrete sumps, and the stained concrete pad.
- 1.3.1.1 Surface Soil Sampling Three surface soil samples were collected from the areas of interest around Building 2055. Surface soil sample 42S00101 was collected near the flammable storage locker at the northwest corner of the building. One sample, 42S00201, was collected adjacent to the stained area on the concrete air conditioner pad at the east end of the building. Sample 42S00301 was collected near the former location of a flammable storage locker at the southeast corner of the building.

NTC-ESSR.S42 FGW.10.99

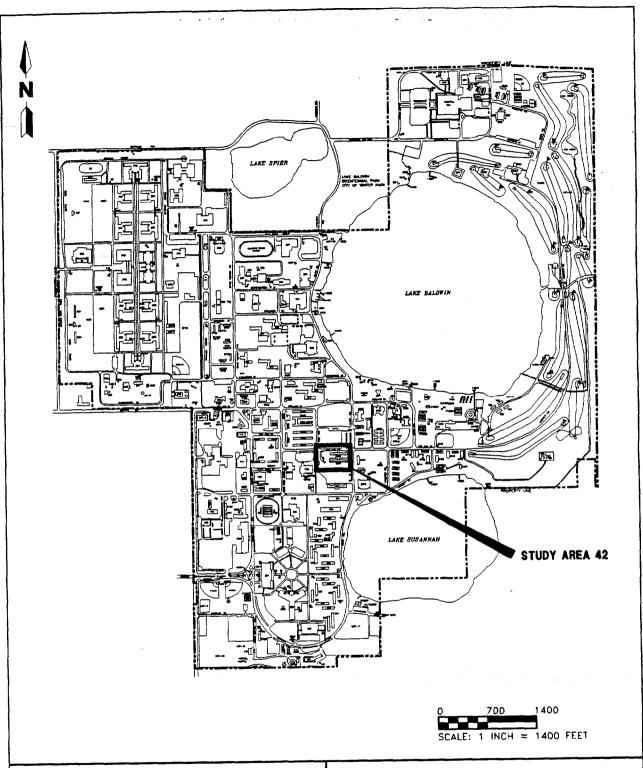


FIGURE 1 LOCATION OF STUDY AREA 42



BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORT, STUDY AREA 42

NAVAL TRAINING CENTER ORLANDO, FLORIDA

K: \02530\02530-09\SSR\02530532.DWG. MAW-NP 05/29/98 13:27:51. AutoCAD R14

The surface soil samples were submitted to an approved laboratory for full suite Contract Laboratory Program (CLP) target compound list (TCL) and target analyte list (TAL) laboratory analysis plus pesticides and polychlorinated biphenyls (PCBs), along with total petroleum hydrocarbons (TPH), in accordance with U.S. Environmental Protection Agency (USEPA) Level IV data quality objectives (DQOs).

1.3.1.2 Soil Boring Investigation and Subsurface Soil Sampling A total of six subsurface soil samples was collected from four locations at the site. One soil boring was advanced in the area of the northwest flammable storage locker. A subsurface soil sample, 42B00101, was collected from a depth of 4 to 5 feet. Two subsurface soil samples, 42B00201 and 42B00202, were collected from 4 to 5 and 5 to 6 feet below land surface (bls), from an area adjacent to the square concrete sump. Sample 42B00301 was collected from a depth of 3.5 to 4.5 feet from an area to the south of the area where the flammable storage locker was removed on the south side of Building 2055. Two subsurface soil samples, 42B00401 and 42B00402, were also collected from 4 to 5 and 5 to 6 feet bls from an area adjacent to the round concrete sump.

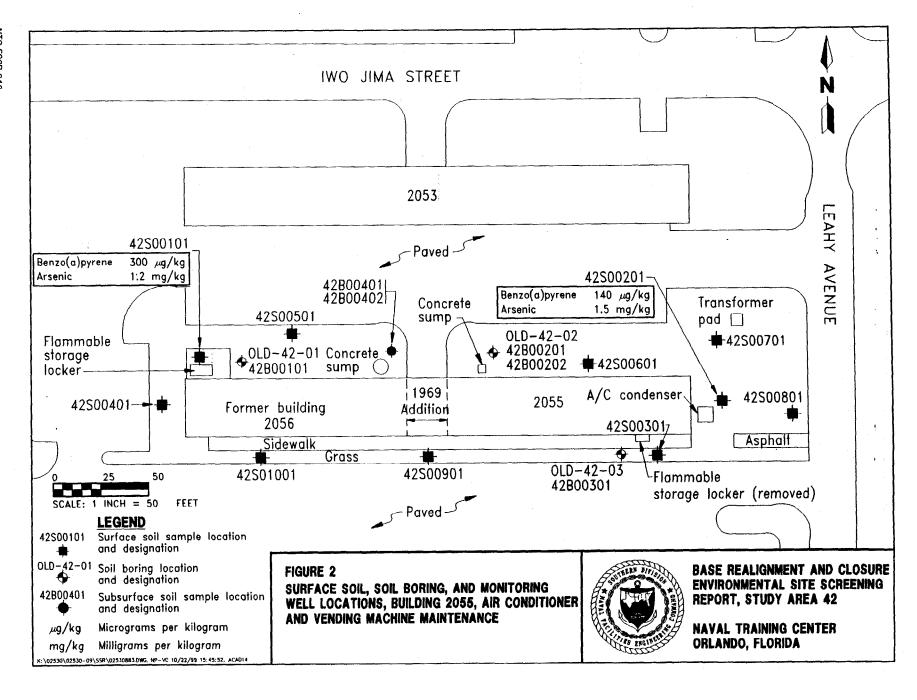
The subsurface soil samples were submitted for full suite CLP TCL and TAL laboratory analysis plus pesticides and PCBs, along with TPH, in accordance with USEPA Level IV DQOs.

1.3.1.3 Groundwater Monitoring Well Installation and Sampling Three monitoring wells, OLD-42-01, OLD-42-02, and OLD-42-03, were installed during the field investigation (Figure 2). Attempts to install temporary wells in hand auger borings were unsuccessful due to a hard silt layer that was encountered at approximately 7 feet bls. Accordingly, the three soil borings were advanced with a hollow stem auger drill rig to a total depth of approximately 16 feet. The soil borings were all completed as monitoring wells. The screened interval for each monitoring well bracketed the water table, which was encountered at 4 to 8 feet bls during the investigation. A groundwater sample was collected from each well using low-flow sampling techniques (ABB-ES, 1997). Groundwater samples were submitted to an approved laboratory for full suite CLP TCL and TAL laboratory analysis plus pesticides and PCBs, along with TPH and suspended solids analysis, in accordance with USEPA Level IV DQOs. Filtered samples (0.45-micron in-line filter) were also collected and submitted for TAL metals analysis.

Monitoring well installation diagrams and field sample data are included in Appendix A.

1.3.2 Results. Analytical results from the media sampled at SA 42 are presented as Summary of Positive Detections Tables in Appendix B. A complete set of analytical results is presented in Appendix C. The analytical results of the surface and subsurface soil samples collected during the initial phase of site screening were evaluated by comparing the concentration of the various compounds detected to screening criteria, including basewide soil background screening levels, Florida Department of Environmental Protection's (FDEP's) soil cleanup goals (SCGs), and USEPA Region III risk-based concentrations (RBCs).

Groundwater analytical data are compared to background screening values, Florida Department of Environmental Protection groundwater guidance concentrations (FGGCs), Federal maximum contaminant levels (MCL), and USEPA Region III RBCs for tap water.



1.3.2.1 Surface Soil Analytical Results Analysis of the surface soil collected at SA 42 detected semivolatile organic compounds (SVOCs) and a number of metals (Appendix B-1).

Benzo(a)pyrene, was detected at concentrations exceeding screening criteria. Concentrations of benzo(a)pyrene in samples 42S00101 and 42S00201 ranged from 140 micrograms per kilogram (μ g/kg) to 300 μ g/kg, exceeding both the Florida residential SCG (100 μ g/kg) and the USEPA Region III RBC for residential soil (88 μ g/kg).

Arsenic was detected in two surface soil samples at concentrations above the residential SCTL of 0.8~mg/kg and the site-specific background of 1.0~mg/kg. The arsenic concentrations detected were 1.2~mg/kg in 42S00101 and 1.5~mg/kg in 42S00201.

- 1.3.2.2 Subsurface Soil Analytical Results Analysis of the subsurface soil collected at SA 42 detected SVOCs and metals (Appendix B-2). None of the analytes detected in the samples from SA 42 were at concentrations exceeding screening values.
- 1.3.2.3 Groundwater Analytical Results Analysis of the groundwater collected at SA 42 detected volatile organic compounds, SVOCs, pesticides, and metals (Appendix B-3). The analytes detected in the groundwater samples from SA 42 were at concentrations below their respective screening criteria.
- 1.4 ADDITIONAL SCREENING INVESTIGATION SUMMARY. After reviewing the data collected during the initial site screening investigation, the Orlando Partnering Team (OPT) determined that additional surface soil sampling was warranted at SA 42. The existing dataset consisted of biased samples collected in areas where releases may potentially have occurred. In order to evaluate the distribution of benzo(a)pyrene, and support a preliminary risk evaluation, if necessary, additional surface soil samples were collected.
- 1.4.1 Sampling Program Seven additional surface soil samples were collected from the grassy areas surrounding Building 2055 (Figure 2). One surface soil sample (42S00401) was collected in the relatively narrow grass area between the west end of Building 2055 and the parking area to the west. Air conditioner maintenance contractor personnel reported that equipment was washed in this area. Two surface soil samples (42S00501 and 42S00601) were collected from the north side of Building 2055, one close to the building and one close to the parking area to the north. Two surface soil samples (42S00701 and 42S00801) were collected at the east end of the site, one adjacent to Leahy Avenue and the other between Building 2055 and a pad-mounted transformer. The final two surface soil samples were collected from the narrow grass strip between the sidewalk along the south side of Building 2055 and the parking lot to the south.
- <u>1.4.2 Results</u> Analysis of the additional soil samples collected from SA 42 detected SVOCs (Appendix B-1). A single SVOC, benzo(a)pyrene, was detected at a concentration equal to the Florida SCG (100 μ g/kg) in sample 42S00801. The sample was collected in close proximity to Leahy Avenue at the eastern end of the site (Figure 2).

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1.5 SA 42, CONCLUSIONS AND RECOMMENDATIONS. The analytical results from media sampled at SA 42 indicated that benzo(a)pyrene and arsenic were present at two surface soil locations at concentrations exceeding residential screening criteria.

Benzo(a)pyrene was detected in two surface soil samples (42S00101 and 42S00201) at concentrations ranging from 140 to 300 $\mu g/kg$. These concentrations exceed the residential SCTL and RBC for surface soil. This area of the base has been developed and urbanized since the base was established. Semivolatile compounds, including benzo(a)pyrene, are not uncommon in urban areas where petroleum products have been used. Benzo(a)pyrene was also detected in sample 42S00801 at a concentration equal to the Florida SCTL (100 $\mu g/kg$).

Arsenic was detected in two surface soil samples (42800101 and 42800201) at concentrations of 1.2 and 1.5 mg/kg. These concentrations exceed the residential SCTL and the established background screening value for surface soil. This area of the base has been developed and urbanized since the base was established. The detection of arsenic at these concentrations may be indicative of routine past application of arsenic-containing pesticides.

- 1.6 INTERIM REMEDIAL ACTION. Based on the results of the site screening investigation, two areas at SA 42 were identified where benzo(a)pyrene concentrations in surface soils exceeded residential screening criteria (Figure 2). In addition, arsenic concentrations in these two surface soil samples also were marginally above the site specific background concentration. The area of the base occupied by SA 42 is intended for a residential re-use scenario. Accordingly, the OPT determined that a limited soil removal, completed in the vicinity of soil samples 42S00101 and 42S00201, would be protective of human health and the environment. This approach is consistent with interim remedial actions (IRAs) at several other SAs that had minor exceedances of residential SCTLs for one or more compounds.
- 1.6.1 IRA Specifications After evaluating the site screening data, a fact sheet was prepared which described the planned IRA implementation (Appendix D). The objective of the IRA was to excavate and properly dispose of surface soils from locations 425001 and 425002 where benzo(a)pyrene concentrations were greater than the FDEP residential SCTL. A sampling scheme was specified in the fact sheet to confirm when sufficient soil had been removed from the locations to achieve the IRA objective.
- 1.6.2 Soil Removal Interim Remedial Action Execution The Environmental Detachment, Charleston (DET) performed the IRA as specified in the fact sheet. The Completion Report prepared by the DET is included as Appendix E. Two areas were excavated and approximately 11 tons of soil were removed from the site. The excavation at the 42S001 sample location was approximately 10 feet by 12 feet to a depth of 1 foot. The excavation at the 42S002 sample location was 10 feet by 10 feet to a depth of 1 foot. Analytical samples collected by the DET from the edges of the excavations had PAH concentrations below SCTLs.
- 1.7 CONCLUSIONS AND RECOMMENDATIONS. Data collected during the site screening investigation at SA 42 indicated that surface soil at two sample locations had benzo(a)pyrene and arsenic concentrations above the FDEP SCTL for residential soil. An IRA was conducted to remediate the surface soils in the vicinity of

these two sample locations. The results presented in the Completion Report prepared by the DET indicate the RGOs for benzo(a)pyrene were met. Based on available information, the remedial activities at SA 42 should be protective of human health and the environment for exposure to surface soil at the site.

HLA recommends that SA 42 be made eligible for transfer, and that the site be reclassified from 7/Gray to 4/Dark Green.

The undersigned members of the Base Realignment and Closure Team concur with the findings and recommendations of the preceding investigation.

STUDY AREA 42	
Vanay Larguer	11-18-99
U.S Environmental Protection (gency, Region IV	Date
Swil ! Hable	11-18-99
Florida Department of Environmental Protection	Date
Manue Hamel	11-18-99
U.S. Department of the Navy	Date

REFERENCES

- ABB Environmental Services, Inc. (ABB-ES). 1995. Site Screening Plan, Groups I through IV Study Areas and Miscellaneous Additional Sites, Naval Training Center (NTC), Orlando, Florida. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina.
- ABB-ES. 1997. Project Operations Plan for Site Investigations and Remedial Investigations, NTC, Orlando, Florida. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina.

MONITORING WELL INSTALLATION DIAGRAMS, AND **GROUNDWATER SAMPLE FIELD DATA**

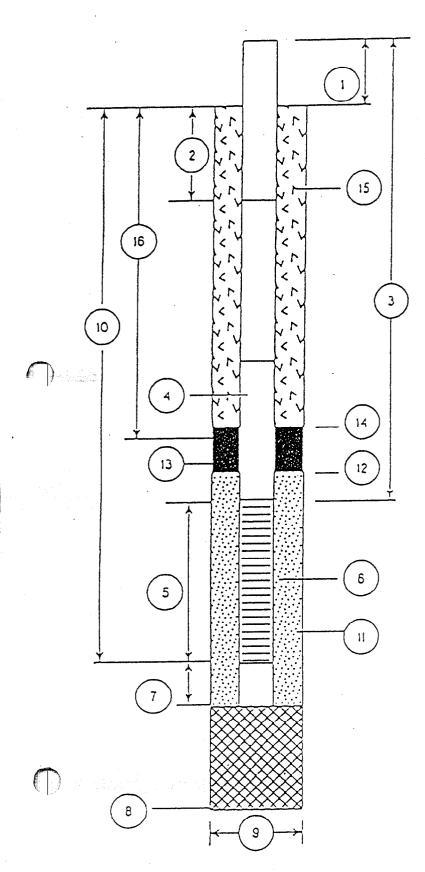
Appendix A-1 Monitoring Well Installation Diagrams
Appendix A-2 Groundwater Sample Field Data
Appendix A-3 Surface and Subsurface Soil Sample Field Data

APPENDIX A-1

MONITORING WELL INSTALLATION DIAGRAMS

DEPARTMENT OF THE NAVY

SOUTHERN DIVISION.
NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON, SC.



WELL CONSTRUCTION DETAIL

WELL NUMBER: 06-42-01

DATE OF INSTALLATION: 10-6/97

- L Height of Casing above ground: FM
- 2. Depth to first Coupling: 6

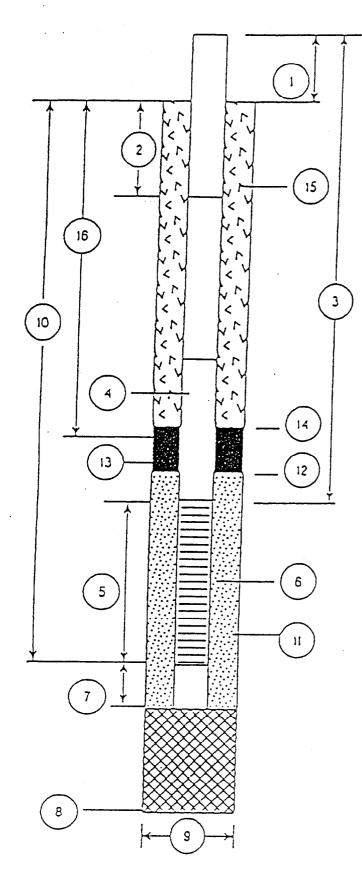
 Coupling Interval Depths: 10'
- 3. Total Length of Riser Pipe: 6
- 4. Type of Riser Pipe: 2" school. 40 pvc
- 5. Length of Screen: 10
- 6. Type of Screen: Z"Stred 40 pvc 0,010 slot
- 7. Length of Sump: 6"
- 8. Total Depth of Boring 16
- 9. Diameter of Boring: 10^{11}
- 10. Depth to Bottom of Screen: 16
- Ovantity Used: 60016 Size: 2040
- 12. Depin to Top of Filter: H'
- Ovantity Used: 5016
- 14. Depin to Top of Seal: 2
- 15. Type of Grout: <u>Next Portland</u>
 Grout Hixture:

Helhod of Placement: Pour

18. Tol. Depth of 6 in Steel Casing: NA.

DEPARTMENT OF THE NAVY

SOUTHERN DIVISION NAVAL FACILITIES ENGINEERING COMMAND CHARLESTON, SC.



WELL CONSTRUCTION DETAIL

WELL NUMBER: OLD-42-02 DATE OF INSTALLATION: 10-6/97

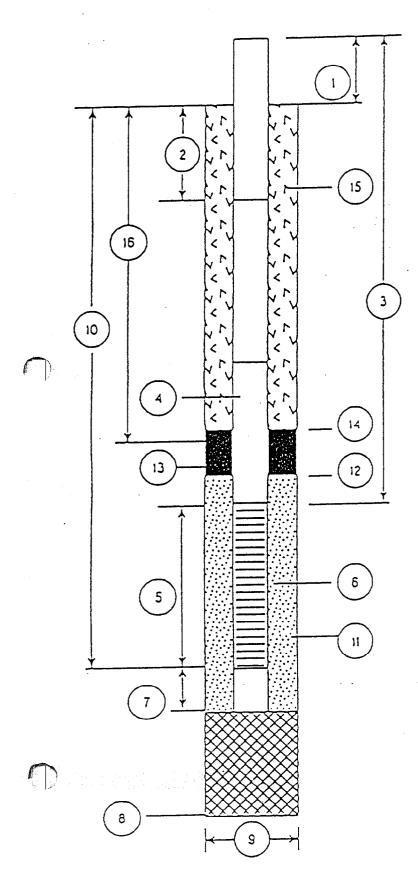
- L Height of Casing above ground: FM
- 2. Depth to first Coupling: 6'
 Coupling Interval Depths: NA
- 3. Total Length of Riser Pipe:
- 4. Type of Riser Pipe: 2 School 40 DVC
- S. Length of Screen: 10
- · 6. Type of Screen 2 school 40 pvc 0,010 slot
- 7. Length of Sump: 6"
- 8. Total Depth of Boring 16
- 9. Diameter of Boring: 10
- 10. Depth to Bottom of Screen: 16
- Ovantity Used: 60016 Size: 2040
- 12. Depin to Top of Filter: H
- 13. Type of Seat 60/45 fine Sand
 - Ovantity Used: 5016
- 14. Depin to Top of Seat: 2
- 15. Type of Grout: <u>Next Cement</u>
 Grout Historie:

Helhod of Placement: Pour

18. Tot. Depth of 6 in Steel Casing: NA

DEPARTMENT OF THE NAVY

SOUTHERN DIVISION NAVAL FACILITIES ENGINEERING COMMAND CHARLESTON, SC.



WELL CONSTRUCTION DETAIL

WELL NUMBER: OLD-42-03 DATE OF INSTALLATION: 10-6/97

- L Height of Casing above ground: FM
- 2. Depth to first Coupling: 6 Coupling Interval Depths: NA
- 3. Total Length of Riser Pipe: 6
- 4. Type of Riser Pipe: 2" Sched. 40 PVC
- 5. Length of Screen: 10
- 6. Type of Screen 21 school. HO PVC 0,010 Slot
- 7: Length of Sump:
- 8. Total Depth of Boring 16
- 9. Diameter of Boring: $\mathbb{O}^{t'}$
- 10. Depin to Bottom of Screen: 16'
- IL Type of Screen Filer: Silica Sand Size: 22/40 Guantity Used: 500 16
- 12. Depth to Top of Filter: 3'
- 13. Type of Seat: 30/65 Som Ovantity Used: 5016
- 14. Depth to Top of Seat:
- 15. Type of Grout: Doot Comore Grout Mixture:

Helhod of Placement: Pour

18. Tot. Depth of 6 in Steel Casing: NA

APPENDIX A-2

GROUNDWATER SAMPLE FIELD DATA

	GROUNDWATER SAMPLE	
Pro	oject NTC ORLANDO	Point of Interest: SA 42
Pro	oject Number: 02530.05	Date: 11-6/97
Sai	mple Location ID: OLD - 42-01 me: Start: 07.55 End: 09.55	Signature of Sampler: William D. Olson
\$	Well Depth 15.95 R. Measured X Top of Well — Historical Casing	Protective XR
	Depth to Water 3:80 Ft. Well Material: Well Locked?: X PVC X Yea No	Wes Dis. 2 inch Water Level Equip. Used: 4 inch Bect, Cond. Probe Roat Activisted Press, Transducer
	Height of Water Column X85 GaVR. (4 in.) =	tal Gal Purged Other
	Purging/Sampling Equipment Used:	Decontemination Fluids Used:
Equipment Documentation	Purging Sampling Perstabic Pump Submersible Pump Bailer PVC/Silicon Tubing Airst Hand Pump In-line Filter Press/Vac Filter	(/ All That Apply at Location) Methanol (100%) 25% Methanol/3% ASTM Type II water Deionized Water Liquinox Solution Hexare HNO_/D.I. Water Solution Potable Water None
Halysia Date	Ambient Air VOC ppm Weil Mouth ppm Field Date Purge Data @	Sample Observations: a Collected X In-line Turbid X Clear Cloudy In Container Colored Coor Gal 41/2 Gal 5 Gal G G Gal
rigid Ailalys	Temperature, Deg. C 23.0 24.0 pH, units 4.94 5.22 Specific Conductivity 8.0 7.2 (6.4.7 Gridanon Reduction, A. min Dissolved Crypen, ppm.	24.0 5.39 70 70 70 70 70 70 70 70 70 70
	Analytical Parameter	✓ I Sample Sample Bottle IOs Collected
a this Location)	VOA HCL SVOA 40C Pegu/PCB 40C Inorganics HND, Explosives 4°C TPH H,50	
	TOC HSO HSO	of = filtered metals, 0.45 in Filtered Turb= 0

Pro Sai	pject NTC ORLAND pject Number: 0253 mple Location ID: 020 me: Start: 1000 Well Depth 15.97 A. Depth to Water 7.95 A.	0,05	X Top of Well Top of Protect Casing	Date:	nterest: SA4 11-6/97 e of Sampler, WUL r Stick-up FM Pl.		
Sai Tin	mple Location ID: OLD ne: Start: 1000 Well Depth 15.97 A.	End: i Measured Historical Well Material	X Top of Well Top of Protect	Signatur Wet Rise	of Sampler Miller Stick-up FM R.	Protective NA Ft.	
Tin	Well Depth 1 5.97 A.	End: 1 Measured Historical Well Material	X Top of Well Top of Protect	Wet Rise	r Stick-up FM Pt.	Protective NA Ft.	
	Well Depth 15.97 A.	Measured Historical Well Material	X Top of Well Top of Protect	Wet Rise	r Stick-up FM Pt.	Protective NA Ft.	
Water Level/Well Data		Historical Well Material	Top of Protect				
Water Level/Well D	Depth to Water 7-95 FL			•		Protective NA P.	
Water		ss	Well Locked?: Yes No	Wof Die.	2 inch 4 inch 6 inch	Water Level Equip. Used X Bect. Cond. Probe — Roar Activated — Press. Transducer	-
	Height of Water Column X	X .16 GWR. (2 in.) 85 GWR. (4 in.) 1.5 GWR. (6 in.) GWR. (_in.)		a/Vol	Well Integrity: Prot. Casing Secure Concrete Collar Intact Other	Yes No X	ing the company of the second
atlon		noling Equipment Use	લ :		Decontamination	n Fluids Used :	
Equipment Documentation	三 三 三 三	Peristatic Pump Submerable Pump Baler PVC/Silicon Tubing Teflon/Silicon Tubing Right	Equipment 10		(/ All That Apply at Loc Methanol (100 25% Methano X Deionized Wa Liquinox Solut Hezzare HNO_DLL Wa	ow) N75% ASTM Type II water ter tion	
Equip	<u> </u>	Hand Pump In-line Filter Press/Vac Filter		w	Potable Water None		
ata ata	Ambient Air VOC .	ppm Well Mouth	/ ≥_ppm Feld Data		Sample Container Turbi		ıdy
id Analysis Data	Purge Data Temperature, Deg. C pH, units Specific Conductivity (umhos/cm. @ 25 Deg. C	24.5 5.54 80	Cal ⊕ Z ¹ /2 G 25.0 5.63 90 19.4	25.0 5.81 80	25.0 5,84 80	25.0 5.90 60	
Field	Oxidation Reduction, with Dissolved Grygen, spm.				4 16 33 and the second	15.66	e je se se se
	lytical Parameter / If Field Filtered	Preservation Method	Volume Required	✓ E Sample Collected	Sample Bottle (Os	erika hozane este, en egit en er 1860 e	
in Location)	VOA SVOA SPEZIFICA SPEZIFI	HCL 40C 40C HN0,				=;=;=	
: 		н'го н'го н'го н'го н'го н'го					.
V # Required	Votes:				motals, 0.45 Suite + TPH+	L, Fill. tudo	, = 0, 48 N7
- •					3 = 13.98 M		

	oject NTC ORL	ANDO	TER SAMPLE	Point of Interest:	5A42		 ,
270	niect Number: 02.5.	ک ۵ ه 30	2	Date: 11-6/9-	}		
Sar	mple Location ID: OL ne: Start: 12 i 2	End: 14	3 +40	Signature of Sam	pier <u>willia</u> n	D. Olson	
	Well Depth 1 <u>5, 72</u> A.	Measured Historical	Top of Well Top of Protective Casing	Well Riser Stick-up F (from ground)	Ca	Discove <u>MA</u> R. ISING/Well Difference	
	Depth to Water <u>7.49</u> FL	Well Material: X PVC SS	Well Locked?: X Yes No	Well Dia.	Wa 2	sing ter Level Equip. Used: Elect. Cond. Probe Roat Activated Press. Transducer	
	Height of Water Column X	X .16 GAVR. (2 in.)85 GAVR. (4 in.)15 GAVR. (6 in.)GAVR. (in.)	1 17	Prot. Ca	igmy: sing Secure • Collar Intact	Yea No	
	<u>Puroina/S</u>	ampling Equipment Us	ed :	<u>Pa</u>	contamination Flu	rids Used :	
	Purging Sampling X X X X X X X X X X X X X X	Penstatic Pump Submersible Pump Bailer PVC/Silcon Tubing Teten/Silcon Tubing Airfit Hand Pump In-line Filter Press/Vac Filter	Equipment ID		at Apply at Location Methanol (100%) 25% Methanol/75; Delonized Water Liquinox Solution Hexane HNO_/0.t. Water Potable Water None	% ASTM Type II water	
	1	ppm Well Mouth	ppm Field Data	Collected X In-line In Contain	Sample Obse Turbid nerColored	ervations:	∍ y
	Ambient Air VOC				11	17	
	Purpe Data Temperature, Deg. C pH, units Specific Conductivity (umbasiem. #25 Deg. Oxidation - Reduction, Disselved Oxygen, ppm	30.0 5.70 59 180.0	CH @ 5 G 29.0 5.54 50 H3.8	79.0 5.55 5.5 32.4	79.0 5.30 5.8 30.8	29,0 5,53 58 28,6	
	Purge Data Temperature, Deg. C pH, units Specific Conductivity {umbosiem, @ 25 Deg. Oxidation - Reduction,	30.0 5.70 59 180.0	29:0 5:54 50 43.8	79.0 5.55 5.5 32.4	<u> </u>	29,0 5.53 58	
-	Purpe Data Temperature, Deg. C pH, units Specific Conductivity (umhos/em. @ 25 Deg. Oxidation - Rearchen, Disselved Oxygen, ppm	-0.)NTU 180.0 -0.)NTU 180.0 -0.)NTU 180.0 -0.)NTU 400 -0.)NTU 400 -0.)NTU 400	29:0 5:54 50 43.8 Wolume Required	79.0 5.55 5.55 32.4 // Sample Collected Di = filtered me	79.0 5.50 5.50 5.50 30.8 	29.0 5.53 58 28.6	,= 0. Z
-	Purpe Data Temperature, Deg. C pH, units Specific Conductivity {umhos/em. @ 25 Deg Oxidation - Reduction, - Disselved Oxygen. spin Analytical Parameter / E Fir Filten VOA SVOA Pest/PCB Inorganics Explosives TPH TOC Nitrate	## Preservat ### ### ############################	29:0 5:54 50 43:8 Wayson Volume Required	79.0 5.55 5.55 32.4	29:0 5:50 5:50 30:8 20:8	29.0 5.53 58 28.6 28.6 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	,= 0. Z

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APPENDIX A-3

SURFACE AND SUBSURFACE SOIL SAMPLE FIELD DATA

Sample Location 10: H2.500 101 Time: Start: 13.50 End: 1423 Signature of Sampler: Authorized Decontramination Pluids Used: SOIL SAMPLE EQUIPMENT USED FOR COLLECTION: DECONTRAMINATION Pluids Used: ALL USED: ALL USED: ALL USED: ALL USED: ALL USED: ALL USED: ALL USED: ALL U	Project: Number: 075	DRLANDO 10.05	Site: <u>5A 42</u> Date: <u>7-9/97</u>	
SOIL SAMPLE EQUIPMENT USED FOR COLLECTION: (X) PANA JUSTER S.S. SPIT SPOON SENDER SENDER SOUND SAMPLE STANDARD STAND	Sample Location ID: H2	500101	- Sizzative of Szeption A (A)	Daga
MAND JUSEP S.S. STAT SPOON STATUL COMOL 25% METHANOU 75% ASTM TYPE II WATER S.S. STAT SPOON SANDLE COLLECTED SANDLE COLLECTED SANDLE COLLECTED SOLUTION SANDLE COLLECTED SANDLE COLLECTED SOLUTION SANDLE COLLECTED SAN	Time: Start: 155%	End: 1425	Signature of Sampler.	
MAND JUSEP S.S. STAT SPOON STATUL COMOL 25% METHANOU 75% ASTM TYPE II WATER S.S. STAT SPOON SANDLE COLLECTED SANDLE COLLECTED SANDLE COLLECTED SOLUTION SANDLE COLLECTED SANDLE COLLECTED SOLUTION SANDLE COLLECTED SAN				
TYPE OF SAMPLE COLLECTED: [] NONE [MOSCAFFE SOIL TYPE:] CLAY SAMPLE CLISERVATIONS: [] SAND [] DODR'S BY DUDY. [] GRAVEL SELD GC DATA: [] FIELD DUPLICATE COLLECTED SAMPLE LOCATION SKETCH: MATRIX JUNE SOURCE SAMPLE LOCATION SKETCH: MATRIX JUNE SOURCE SOLLECTED SAMPLE LOCATION SKETCH: MATRIX JUNE SOLLECTED SAMPLE SOLLECTED SAMPLE BOTTLE IDS OTESSKETCH (42500 101) = FUll Solito + TPH PONCE KOY ZOSS ZO		- FEDUA CNAH [X] 095 TILS . S.S. [] 12/042 [] 14A0 SPOON 14A9 MUNIMULA []	ALL USED THYL ALCOHOL JETHYL ALCOHO	
SAMPLE LOCATION SKETCH: DUPLICATE ID MATRIX OF REQUIRED AT THIS LOCATION MATRIX OT PRESENTE WITH ACCUMENT OTESSAKETCH H2500 01 = Full Scitc + TPH Fence Z055		[M DISCRETE [] COMPOSTE SAMPLE CESERVA [] COOR———————————————————————————————————	OLLECTED: [] NONE SOIL TYPE: [] CLAY IONS: [X] SAND	
TOTESSKETCH (42500101) = Full Scitc + TPH	DUPLICATE ID	DAY:	S	
POTESSKETCH (42500 101) = FUll Scite + TPH Fence Rer Z055				
Fence Fence Rer 2055		ACID-BASE REDUK		NOTIFIE IDS
Fence Fence Rer 2055	OTES/SKETCH 42500	101) = Full Soite	H9T +	<u> </u>
2055	Fence			
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SURFACESOILSAMPLE	FIELD DATA RECORD
Project: NTC ORLANDO	Site: 5A 4Z
Project Number: 07530:05	Date: 7-9/97
Sample Location ID: HZ500 201 + D	-00 - N
Time: Start: 1320 End: 1340	Signature of Sampler: willtam D. Oba
SOIL SAMPLE EQUIPMENT USED FOR [X] HAND AUGER [] S.S. SPJT SPOON [] SHOVEL [] HAND SPOON [] ALUMINUM PANS [] SS BUCKET [] TYPE OF SAMPLE COLL! [M] DISCRETE [] COMPOSTE SAMPLE OSSERVATIONS [] 1000 -	COLLECTION: DECONTAMINATION FLUIDS USED: ALL USED ETHYL ALCOHOL 25% METHANOU 75% ASTM TYPE II WATER DEIONIZED WATER I LIOUINOX SOLUTION HEXANE HOO 3 SOLUTION POTABLE WATER ONONE SOIL TYPE: CLAY ODE AND
SAMPLES COLLECTED	and decreased a long of the first of the fi
MATRIX OF REQUIRED AT THIS LOCATION	/ IF SAMPLE COLLICTED SAMPLE BOTTLE IDS
HZ500 ZOI = FUII SUI HZ500 ZOID = FUII SU	te +TPH ite
NTS 2055 [A/C]	

Sureal estatement as	
Project: NTC ORLANDO	Site: <u>5A 47</u>
Project Number: <u>02530.05</u>	Date: 7-9/97
Sample Location ID: <u>42500301+M5+M50</u> Time: Start: <u>1340</u> End: <u>1358</u>	Signature of Sampler: Nothing 12000
Time. State. 12 17	
SOIL SAMPLE EQUIPMENT USED FO	✓ ALL USED
[] S.S. SPLIT SPOON	[] ETHYL ALCOHOL [] 25% METHANOU 75% ASTM TYPE II WATER
DEFTH OF SAMPLE	N) DEIONIZED WATER POLICUINCX SOLUTION
	[]HEXANE
TYPE OF SAMPLE COL	[) POTABLE WATER LECTED: [] NONE
A DISCRETE () COMPOSTE	SOIL TYPE:
SAMPLE CESERVATION] CLAY NS: L SAND 1 ORGANIC
Dicoros Brow	GRAVEL
FIELD GC DATA: [] FIELD DUPLICATE COLLECTED SAMPLE	LOCATION SKETCH:
DUPUCATE ID	
_ SAMPLES COLLECTED MATRIX	
VEREQUEED DE SE SECUENTA VOLUME LOCATION SE SE SECUENTA VOLUME REQUEED	
LOCATION E D ACID-BASE REQUIRED	VIF SAUGE SAMPLE FORTILE IDS
HOTES/SKETCH/42500301 = FUIL SUITE	HAT +
42500301M5=FUIL SU	oite.
(H2500301M5D=FJII 5	sorte.
(HZ50030171310=10110	
	2055 - sener N
	FORMET IUC, N
T	JOSS FORMET INC. NTS TICKET INC. NTS GRAN SIDE WALK
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is the model and entropy by the contract of t

4.

Project: VIC O Project Number: 025 Sample Location ID: 42	RLANDO	Site: 5A 42 Date: 7-9/97	
Time: Start: 1530	End: 1540	Signature of Sampler Author D. Olso	
SOIL SAMPLE DEFTH OF SAMPLE 5-6	FEDUA CHAH () 1 JS. S. S. S. J	25% METHANOU 75% ASTM TYPE II WATER DEIONIZED WATER LIOUINOX SOLUTION HEXANE HNO 3 SOLUTION POTABLE WATER OLLECTED: NONE SOIL TYPE: CLAY SAND LORGANIC	•
FIELD GC DATA: [] FIELD DUPLICATE DUPLICATE ID _	COLLECTED SAME		
MATRIX	/U PRESERVED WITH VOLUM ACID-BASE REQUEST		
HOTES/SKETCH (42B)	00 10 1 = Full 5	vite + TPH	-
FENCE FLAME LOCKER 20	55	NTS	

SURFACESOILSAMP	LE FIELD DATA RECORD
Project: NITC ORLANDO	Site: 5A 42
Project: NTC ORLANDO Project Number: 02530.05	Daie: 7-9/97
Sample Location ID: 42 B 0020	
Time: Start: 1450 End: 1505	Signature of Sampler William D. Olson
SOIL SAMPLE EDUNAMENT USED FEBRUA CHAH (X) FOR TLES 2.2.2 []	FOR COLLECTION: DECONTAMINATION FLUIDS USED: ALL USED ON [] ETHYL ALCOHOL
DEFTH OF SAMPLE 4-5/ [] HAND SPOON [] ALUMINUM PAN [] ISS EUCKET	125% METHANOU 75% ASTM TYPE II WATER 1 DEIONIZED WATER S IX] LIOUINOX SOLUTION IX] HEXANE
i 1	() HNO 3 SOLUTION () POTABLE WATER
TYPE OF SAMPLE O (X) DISCRETE () COMPOSITE	SOIL TYPE:
SAMPLE CESSERVA*	TIONS: [) CLAY SAND ORGANIC
IX) COLOR LIGHT	Brown GRAVEL
	LE LOCATION SKETCH:
DUPLICATE ID DIY	
SAMPLES COLLECTED	
MATRIX	
AT THE COURT OF H TO ACCOUNT ON THE COURT ON THE	
ACID-BASE REQUER	
HOTESSKETCH (HZBOOZOI = FUIIS	vite + TPH
sour doub	-42-02
2055	

The control of the co

Project: NTC ORLANDO Project Number: 02530.05 Sample Location ID: 42B002D2 Time: Start: 1505 End: 1515	Site: SA 42 Date: 7-9/97 Signature of Sampler: Willes D. Olsc
SOIL SAMPLE EQUIPMENT USED [X] HAND AUGER [] S.S. SPJT SPO [] SHOVEL [] HAND SPOON [] ALUMINUM PAN [] SS EUCKET [] TYPE OF SAMPLE [] COMPOSTE [] COMPOSTE SAMPLE CESERVA [] ODOR [] ALUCIOR LISTA] 25% METHANOU 75% ASTM TYPE II WATER (X) DEIONIZED WATER (X) LIQUINOX SOLUTION HEXANE] HNO 3 SOLUTION POTABLE WATER COLLECTED: NONE SOIL TYPE: 1 CLAY
FIELD GC DATA: [] FIELD DUPLICATE COLLECTED SAME DUPLICATE ID [] YE	
SAMPLES COLLECTEDMATRIX	
AT THIS LOCATION OF THE SERVED WITH VOLUME ACCOUNTY ACCOU	
MOTESASKETCH 47800 202= FUIL	Suite + TPH

	SURFACESOILSAMP	LE FIELD DATA RECO	RD
a springere approximate server as a server serve		site: 5A 42	
Project: NTC OK	17/0DO	Daie: 7-9/9-	<u> </u>
Project Number: 0'25 Sample Location ID: 42	3,00,301	••	M > M
Time: Start: 1423	End: 1450	Signature of Sampler:	Julian D. Ollan
SOIL SAMPLE DEPTH OF SAMPLE 3.5 - L	FEDUA CHAH M	ON []ETHYLA []25% MET []0EIONIZI	LCOHOL HANOU 75% ASTM TYPE II WATER ED WATER K SOLUTION
	TYPE OF SAMPLE (DX) DISCRETE [) COMPOSITE SAMPLE CESSERVA [) ODOR	[] POTABLE COLLECTED: [] NONE SOIL TYPE: [] CLAY	WATER
IELD GC DATA: [] FIELD DUPLICA' DUPLICATE ID	E COLLECTED SAME		
AMPLES COLLECTED MATRIX			
SURFACE CHARGE PARTIES OF VOLLY OF VOLL	רונים אודא כדאקפפא עי. דינספא פצא-בוסג		SAMPLI BOTTLI 108
HOTESSKETCH (HZBC	00301= Full 5	juite + TPH	
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1 June 25	-siden	eal K	NIS
Parks	A.J.		

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Project: NTC ORLANDO Project Number: 02530, 05 Sample Location ID: 42800401 Time: Start: 1515 End: 1524	Site: 5A42 Date: 7-9/97 Signature of Sampler: WHLD Olso
	/ ALL USED [] ETHYL AL COHOL [] 25% METHANOU 75% ASTM TYPE II WATER [X] DEIONIZED WATER [X] LIOUINOX SOLUTION [] HEXANE [] HNO 3 SOLUTION [] POTABLE WATER [] NONE SOIL TYPE: [] I CLAY
SAMPLES COLLECTED MATRIX F REQUIRED ATTHIS LOCATION DEPT SERVED WITH VOLUME REQUIRED ACID-BASE [] [] [] [] [] [] [] [] [] [COLLECTED SAMPLE BOTTLE IDS
ROUND TO SUMP SOUTH BOTTLY	1 + TPH NTS

SURFACESOIL SAMPLE FIELD DATA RECORD

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Project: NTC (2530.05		: <u>SA 42</u> :: 2-26 89	
Sample Location ID: Fine: Start: 0900	End: <u>09</u>	120 Sig	nature of Sampler: <u>W</u>	& pala
SOIL SAMPLE DEPTH OF SAMPLE	2 / []S []S []S []S []S []C	IIPMENT USED FOR COLLEGAND AUGER S.S. SPUT SPOON SHOVEL VAND SPOON LUMINUM PANS SEUCKET OF SAMPLE COLLECTED: SCRETE OMPOSTE DIE CESSERVATIONS: DOR DI OR MAIN IX ACO WIN	ECTION: DECONTAMINATION FL ALL USED [STHYL ALCOHOL A J25% METHANOU 75 [DEIONIZED WATER [JIOUINOX SOLUTION [] HOTABLE WATER [] HONE [] ONONE SOIL TYPE: [] CLAY [] ORGANIC [] GRAVEL	UIDS USED: % ASTM TYPE II WATER
SAMPLES COLLECTED MATRIX FOR REQUIRED SHE	/ U PRESERVED WITH ACID-BASE [] [] [] [] [] [] [] [] [] [IT SAMPLE SAME OF THE PROPERTY	PL MOTTLE 1DS
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SUR	ACESOILSAMPLE	A DIELD DA	TA RECORD	
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Project: NTC ORLAN Project Number: 02530,05	<u> </u>	Date: 2-	26/99	
Project Number: 02530,03)	Daie	- ^^	0.0
Sample Location ID: 425 OC Time: Start: 6920 En	d. 493009H	O Signature	of Sampler VIII	a Line
Time: Start	<u> </u>			
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-			DECONTAMINATION FL	ince tiest.
SOIL SAMPLE	EQUIPMENT USED FO		/ ALL USED	0103 0325.
,	אססקע דנקצ .s.s []		JETHYL ALCOHOL	% ASTM TYPE II WATER
DEFTH OF SAMPLE 0- Z	() SHOVEL NOOSE CHAHA)		TAT DEIONIZED WATER	•
	ALUMINUM PANS		HEXANE	Ν.
	[] SS EVOKET		[]HNO .SOLUTION	
	TYPE OF SAMPLE COL	FCTED.	[]POTABLE WATER] NONE	
	X) DISCRETE	LEGIES.	LINONE	
	() COMPOSITE		SOIL TYPE:	
	SAMPLE CESERVATIO	NS:	CASS (X)	
	[] ODOR	L bmww	ORGANIC GRAVEL	
	IN COLOR THE T	<u> </u>	[]GARFEE	
FIELD GC DATA: { } FIELD DUPLICATE COLLECTION DUPLICATE ID	TED SAMPLE	LOCATION SKET	ion:	
		ta Budabean		
SAMPLES COLLECTED				
MATRIX				
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HOTES/SKETCH	4250	0501=	- 8310 P	AH
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	RLANDO	Site: <u>5A HZ</u>
Project Number: 0		Date: 2 · 26/98
Sample Location ID:		Signature of Sampler: WOOD Olse
	Z Bio. <u>1000</u>	Signature of Sampler: 100 000 3- 03220
•		
		•
SOIL SAMPLE		
	FEDUA CNAH (XI	
m	1] S.S. SPJT SP 1] S.S. SPJT SP	OON (/) ETHYL ALCOHOL [X] 25% METHANOU 75% ASTM TYPE II WA
EFTH OF SAMPLE	- 2 [] SHOVEL WHALL SPOON [] ALUMINUM P.	M DEIONIZED WATER
	[] SS BUCKET	RNS [PC] LIQUINOX SOLUTION [] HEXANE
		[] HNO 3 SOLUTION [] POTABLE WATER
	TYPE OF SAMPLE	COLLECTED:] NONE
	DISCRETE ODMPOSTE	SOIL TYPE:
	SAMPLE CESERV	[] CLAY ATIONS: KI SAND
		ORGANIC
	K)COLOR_FA	[] GRAVEL
LD GC DATA: [] FIELD DUP	HCATE COLLECTED SAV	IPLE LOCATION SKETCH:
DUPLICATE	EID CI	ES .
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		<mark>and the state of </mark>
PLES COLLECTED		
APLES COLLECTED MATRIX		
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MATRIX	✓ U PRESERVED WITH VOLUMACID-BASE REQUIRE	
MATRIX FREQUEED BE	/ U PRESERVED WITH VOLUMACIO-BASE REQUE	
MATRIX		
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MATRX FRIQUENED AT THIS CONTROL AT THI	ACID-BASE REQUE	
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Project: NTC OR L Project Number: 02530	100 100 100 100 100 100 100 100 100 100	Site: 5A 4Z Date: 2-26198
Sample Location ID: 425 Time: Start: 1000	00 701 End: 1022	Signature of Sampler: With A. Osov
SOIL SAMPLE DEFTH OF SAMPLE	EQUIPMENT USED RESULA CHAH (X RESULA CHAH (X RESULA CHAH RESULA CH	M DEIONIZED WATER S [M LIQUINOX SOLUTION [] HEXANE [] HNO 3 SOLUTION [] POTABLE WATER
	K) DISCRETE [) COMPOSTE SAMPLE DESERVAT [) ODDR	SOIL TYPE: []CLAY
FIELD GC DATA: [] FIELD DUPLICATE DUPLICATE ID	COLLECTED SAMP	
MATRIX DE REQUIRED AT THIS LOCATION	ACID BASE REQUE	
HOTESSKETCH NIS	54	(H250070L)
		42500701 ms 42500701 ms 42500701 msb

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SURFACE SOIL SAMPLE FIELD DATA RECORD
Project: NTC ORLANDO Site: 5A 4Z Project Number: 62530.05 Date: 2-26/98
Sample Location ID: 4250080 Time: Start: 10 22 End: 10 30 Signature of Sampler D. Q10
SOIL SAMPLE EQUIPMENT USED FOR COLLECTION: DECONTAMINATION FLUIDS USED: [7] S.S. CHAN AUGER [7] S.S. SPJT SPOON [8] 25% METHANOU 75% ASTM TYPE II WATER [7] DEIONIZED WATER
TALUMINUM PANS [] SS EUCKET [] HEXANE [] HOO; SOLUTION [] POTABLE WATER TYPE OF SAMPLE COLLECTED: [] NONE
MIDISCRETE [] COMPOSTE SOIL TYPE: [] CLAY SAMPLE CESERVATIONS: [] ODOR
FIELD GC DATA: [] FIELD DUPLICATE COLLECTED SAMPLE LOCATION SKETCH: DUPLICATE ID
SAMPLES COLLECTED
MATRX PREQUIRED US S AT THIS S S LOCATION S S ACID-BASE REQUIRED COLLECTED SAMPL BOTTLE IDS
HOTESSKETCH 42500801=8310 PAH
NOTESSKETCH 425008012 8 310 PMH
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SURFACESOILSAMPLE	FIELD DATA RECORD
	50 43
Project: NTC OR LAND	Site: 5772 Date: 2-26/98
Project Number: 02530.05 Sample Location ID: H2 50060 L	^_
Time: Start: 1030 End: 1045	Signature of Sampler William D. Ola
SOIL SAMPLE EQUIPMENT USED FO [X] FOR SPLIT SPOON [] SHOPEL	R COLLECTION: DECONTAMINATION FLUIDS USED: / ALL USED [] ETHYL ALCOHOL [] 25% METHANOU 75% ASTM TYPE II WATER
DEFTH OF SAMPLE 0-2 (V) HAND SPOON ALUMINUM PANS SS EUCKET	(X) DEIONIZED WATER (X) DEIONINOX SOLUTION () HEXANE () HNO 3 SOLUTION
TYPE OF SAMPLE COL IXI DISCRETE [] COMPOSTE	SOIL TYPE:
SAMPLE CESERVATION [] ODOR	JORGANIC
DUPLICATE ID NO	LOCATION SKETCH:
SAMPLES COLLECTED MATRIX	
VE REQUERED BY HE SENTENTED WITH VOLUME REQUERED ACCOUNTS OF ACCOUNTS ACCOUNTS OF ACCOUNTS	/ IF SAMPLE SAMPLE BOTTLE IDS
HOTES/SKETCH 4	7500901= 8310 PAH
N75	
160' 71'2' H 25	5009 OL

SURFACESDILSAMPLE	FIELD DATA RECORD
Project: NTC OR LANDO	Site: 5A 42
Project Number: 02530,05	Date: 2-26/98
Sample Location ID: U2501001	1-00 000
Time: Start: 10 45 End: 1106	Signature of Sampler: With P.O.S.
SOIL SAMPLE FOUR PRINT USED FOR SOURCE TO SERVE	COLLECTION: DECONTAMINATION FLUIDS USED: / ALL USED [] ETHYL ALCOHOL [X] 25% METHANOU 75% ASTM TYPE II WATER [X] DEIONIZED WATER [X] LIOUINOX SOLUTION [] HEXANE
TYPE OF SAMPLE COLLE M) DISCRETE [COMPOSTE SAMPLE CESSERVATIONS [] ODOR	JHNO SOLUTION JPOTABLE WATER JNONE SOIL TYPE: JCLAY SAND JORGANIC
SAMPLES COLLECTED MATRIX	
FEQUENCY AT THIS VERY TO ACCO-BASE REQUIRED	COLLECTED SAMPLE BOTTLE IDS
HOTES/SKETCH N 42 4	01001 = 8310 PAH
NTS	
2055	

APPENDIX B

SUMMARY OF POSITIVE DETECTIONS TABLES

Table B-1 Summary of Positive Detections in Surface Soil

Table B-2 Summary of Positive Detections in Subsurface Soil Table B-3 Summary of Positive Detections in Groundwater

TABLE B-1

SUMMARY OF POSITIVE DETECTIONS IN SURFACE SOIL

Appendix B Table B-1. Summary of Positive Detections in Surface Soil Analytical Results Study Area 42

	Background	SCTL 2 for	RBC ³ for	RBC ³ for							<u> </u>	
identifier		Residential Soil	Residential Soil	Industrial Soil	42S00101	425002	01	42S00201D	42S00301	42S00401	42S00401D	42S00801
Sampling Date					9-Jul-97	9-Jul-9	7	9-Jul-97	9-Jul-97	26-Feb-98	26-Feb-98	26-Feb-98
Depth bis (ft)					0-1	0-1		0-1	0-1	0-1	0-1	0-1
Semivolatile Organics, ug/kg												
Acenaphthylene		670,000	2,300,000 n	61,000,000 n	220 J	91	J	85 J				
Anthracene		19,000,000	23,000,000 n	610,000,000 n	69 J							
Benzo(a)anthracene		1,400	880 c	7,800 c	160 J	39		70 J				
Benzo(a)pyrene	 	100	88 c	780 c	400 J	ik.W		1810 J		67	65	100
Benzo(b)fluoranthene		1,400	880 c	7,800 c	430	260		230 J		77	76	120
Benzo(g,h,i)perylene		2,300,000	2,300,000 n	61,000,000 n	59 J					81	82	130
Benzo(k)fluoranthene		15,000	8,800 c	78,000 c	390	170	J	170 J		35	30	50
Chrysene		140,000	88,000 c	780,000 c	440	150		200 J		63	62	110
Fluoranthene		2,800,000	3,100,000 n	82,000,000 n	570	220	J	200 J		83	110	
Indeno(1,2,3-cd)pyrene		1,500	880 c	7,800 c	84 J	49	J	46 J				99
Phenanthrene		1,900,000	2,300,000 n	61,000,000 n	220 J	51		46 J				
Pyrene		2,200,000	2,300,000 n	61,000,000 n	460	110	J	150 J		89	89	130
Inorganics, mg/kg												
Aluminum	2088	72,000	78,000 n	1,000,000 n	1020	1570		1650	1480	NA	NA	NA
Arsenic	1.0	0.8	0.43 / 23 c/n	3.8 / 610 c/n	J	16.3	J	1 J		NA	NA	NA
Barium ·	8.7	105	5,500 n	140,000 n	15 J	10.5		10.6 J	3.2 J	NA	NA	NA
Beryllium	ND	120	0.15 c	1.3 c					0.06 J	NA	NA	NA
Cadmium	0.98	75	39 n	1,000 n		0.94	J	1.5		NA	NA	NA
Calcium	25295	ND	1,000,000	1,000,000	2140	2430		2730	2690	NA	NA	NA
Chromium	5	290	390 n	10,000 n	2.6	3.9	\exists	4.2	1.8 J	NA	NA	NA
Copper	4.1	105	3,100 n	82,000 n	6.9	24.8		21.1	0.91 J	NA	NA	NA
Iron	712	23,000	23,000 n	610,000 n	548	674	1	618	483	NA	NA	NA
Lead	14.5	500	400	400	125	191		172	12	NA	NA	NA
Magnesium	328	ND	460,468	460,468	86.2 J	97.1	J	112 J	81 J	NA	NA	NA
Manganese	8.1	1,600	1,800 n	47,000 n	19.5	16.2		15.8	4.7	NA	NA	NA
Mercury	0.07	3.7	23 n	610 n	0.23 J		_			NA	NA	NA
Potassium	210	ND	1,000,000	1,000,000		97.2	J	133 J	80.6 J	NA	NA	NA
Selenium	1.1	390	390 n	10,000 n	0.82 J					NA	NA	NA
Vanadium	3.1	15	550 n	14,000 n	2.2 J	1.6	J	1.8 J	1.2 J	NA	NA	NA
Zinc	17.2	23,000	23,000 n	610,000 n	107	73.2		75.4		NA	NA	NA
General Chemistry, mg/kg												
Total Petroleum Hydrocarbons	ND	ND	ND	ND	260	NA.				NA	NA	NA I

Notes for Summary of Positive Detections in Surface Soil Analytical Results Study Area 42

Naval Training Center, Orlando Orlando, FL

NOTES:

The background screening value is twice the average of detected concentrations for inorganic analytes.

² SCTL = Florida Department of Environmental Protection, Soil Cleanup Target Levels, Chapter 62-777 FAC, May 26, 1999.

Values indicated are for direct exposure scenario. Value for mercury is for inorganic mercury

Chromium values are for Chromium (IV).

³ RBC = Risk-Based Concentration Table, USEPA Region III, May 1996, R.L. Smith. RBC for chromium is based on chromium VI. RBC for lead is not available, value is Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites (OSWER directive 9355-4-12). For essential nutrients (calcium, magnesium, potassium) screening values were derived based on recommended daily allowances (RDAs).

RBC for benzo(g,h,i)perylene and phenanthrene are not available, value is based on pyrene.

mg/kg = milligrams per kilogram. ug/kg = micrograms per kilogram.

n = noncarcinogenic pathway

c = carcinogenic pathway

ND = Not determined.

NA = Not Analyzed.

bls = below land surface

OSWER = Office of Solid Waste and Emergency Response.

USEPA = U.S. Environmental Protection Agency.

FDEP = Florida Department of Environmental Protection

J = Reported concentration is an estimated quantity.

All inorganics results expressed in milligrams per kilogram (mg/kg) soil dry weight; organics in micrograms per kilogram (ug/kg) soil dry weight.

Bold/shaded values indicate exceedance of regulatory guidance and background.

Blank space indicates analyte/compound was not detected at the reporting limit.

TABLE B-2

SUMMARY OF POSITIVE DETECTIONS IN SUBSURFACE SOIL

Appendix B Table B-2. Summary of Positive Detections in Subsurface Soil Analytical Results Study Area 42

	Background		RBC ³ for	RBC ³ for	•											_
Identifier	Screening ¹	FDEP SCTL ²	Residential Soi	Industrial S	oil	42B00101	1	42B0020	01	42B00202	42B003	101	42B004	01	42B004	102
Sampling Date						9-Jul-97		9-Jul-9	7	9-Jul-97	9-Jul-9	97	9-Jul-9	7	9-Jul-9	
Depth bis (ft)						5-6		4-5		5-6	3.5-4.	5	4-5		5-6	
Semivolatile Organics, ug/kg												1		Г	 	Т
2,6-Dinitrotoluene		NA	78,000 n	2,000,000	n		\neg	230	J			1	 	t	,	+
Inorganics, mg/kg												1		<u> </u>		-
Aluminum	2,119	72,000	78,000 n	1,000,000	n	12100		549		245	1330		614	1	696	1
Arsenic	1.1	0.8	0.43 / 23 c/r	3.8 / 610	c/n	0.64 J						\top				1
Barium	3.6	105	5,500 n	140,000	n	1.5 J		1.8	J	0.63 J	2.1	3	1.6	J	1.6	J
Calcium	115	ND	1,000,000	1,000,000		350 J		358	J		8620					<u> </u>
Chromium	4	290	390 n	10,000	n	10.6		1.2	J	0.62 J	2	J	1.4	j	1.5	J
Copper	ND	105	3,100 n	82,000	n	0.6 J		0.44	j		0.41	J	0.36	J		Ť
Iron	264	23,000	23,000 n	610,000	n	495		129		43.3	320		196		421	\vdash
Lead	3.9	500	400	400		7.4	\neg	2.2		0.75	2.1		1.6		1.8	+
Magnesium	32.8	ND	460,468	460,468			\neg				123	J	<u> </u>			\vdash
Manganese	8.1	1,600	1,800 n	47,000	n	0.64 J		0.98	J	0.55 J	1.9	J	0.83	J	0.92	J
Potassium	ND	ND	1,000,000	1,000,000		137 J		115	J			1.	87.2	J	104	+
Selenium ·	1.3	390	390 n	10,000	n	0.82 J		0.68	J					Ė	1	Ť
Vanadium	3.4	15	550 n	14,000	n	3.1 J					1.3	J	0.44	J	1.2	J

Notes for Summary of Positive Detections in Subsurface Soil Analytical Results Study Area 42

Naval Training Center, Orlando Orlando, FL

NOTES:

The background screening value is twice the average of detected concentrations for inorganic analytes.

SCTL = Florida Department of Environmental Protection, Soil Cleanup Target Levels, Chapter 62-777 FAC, May 26, 1999.

Values indicated are for direct exposure scenario. Value for mercury is for inorganic mercury

Chromium values are for Chromium (IV).

³ RBC = Risk-Based Concentration Table, USEPA Region III, May 1996, R.L. Smith. RBC for chromium is based on chromium VI. RBC for lead is not available, value is Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites (OSWER directive 9355-4-12). For essential nutrients (calcium, magnesium, potassium) screening values were derived based on recommended daily allowances (RDAs).

RBC for benzo(g,h,i)perylene and phenanthrene are not available, value is based on pyrene.

mg/kg = milligrams per kilogram.

ug/kg = micrograms per kilogram.

n = noncarcinogenic pathway

c = carcinogenic pathway

ND = Not determined.

NA = Not Analyzed.

bls = below land surface

OSWER = Office of Solid Waste and Emergency Response.

USEPA = U.S. Environmental Protection Agency.

FDEP = Florida Department of Environmental Protection

J = Reported concentration is an estimated quantity.

All inorganics results expressed in milligrams per kilogram (mg/kg) soil dry weight; organics in micrograms per kilogram (ug/kg) soil dry weight.

Bold/shaded values indicate exceedance of regulatory guidance and background.

Blank space indicates analyte/compound was not detected at the reporting limit.

TABLE B-3 SUMMARY OF POSITIVE DETECTIONS IN GROUNDWATER

Appendix B Table B-3. Summary of Positive Detections in Groundwater Analytical Results Study Area 42

Well ID							OLD	-42-01		T	OLD	-42-02			OLD-	42-03	
ldentifier	Backgroun Screening		Primary L ² FEDMCL ³	RBC ⁴ for Water	•	42G00		42H00	101	42G00		42H00	201	42G00		42H00	204
Sampling Date	Ĭ			T		6-Nov		6-Nov		6-Nov		6-Nov-		6-Nov			
Depth bis (ft)				T	 	6-1		6-1		6-16		6-16				6-Nov	
Volatile Organics, ug/L				 	 	0-1	Ť		Ť	0-10	, 	0-10	-	6-10	7	6-10	5
Styrene		100	p 100	1600	n		1	NA.		0.7	1	NA				NA	+
Semivolatile organics, ug/L							 	1	-	1	-				-	, ,	+-
Naphthalene		20	c ND	1500	n		1	NA	-	 		NA		0.3		NA	-
Pesticides/PCBs, ug/L							†	 	 	 	 	100	 	<u> </u>	-	N/A	1-
Endosulfan I		42	o ND	220	n		 	NA		0.01	1	NA			 	NA	+
Heptachlor		0.4	0.4	0.0023	С	0.12	J	NA	 	0.12		NA NA	-	0.12		NA NA	+
inorganics, ug/L		T T					1	† 	 		-	- 147		0.12	-	11/4	-
Aluminum	4,067	200 8	ND ND	37,000	n	489		193	В	1120		294		1200		86	-
Barium	31.4	2,000	2,000	2,600	n	9.9	В	8.1		19		10.4	В	9.1		4.4	
Calcium	36,830	ND	ND	1,000,000		10900		10700	1	10000		10000	-	5950		5820	+
Chromium	7.8	100 [100	180	n					 	В			2.3	R	0020	 - - - - - - - - - -
Copper	5.4	1,000 s	1300	1,500	n							2.5	В				
iron	1,227	300 s	ND	11,000	n	236		183		144		115		95.5	В	65.5	R
Lead	4	15 p	15	15		1.7	В	1	<u> </u>					, 00.0		1	-
Magnesium	4,560	ND	ND	118,807		599	В	587	В	363	В	370	В	544	B	537	R
Manganese	17	50 s	ND	840	n	13.9	В	13.4	В	15.5		15.5	-	3.8		4	
Potassium	5,400	ND	ND	297,016		1440	8	1410	ļ	2180	В	2270	В	640		646	
Sodium	18,222	160,000 p	ND	396,022		1820	В	2030	ļ —	3230		3430		1930		2560	
Vanadium	20.6	49 s		260	n		В			2.7		2.6		,550		2500	
Zinc	4	5,000 s	ND	11,000	n	10.7		6.9	В	2.9		3.3		2.9	R	3.7	D

Notes for Summary of Positive Detections in Groundwater Analytical Results Study Area 42

Naval Training Center, Orlando Orlando, FL

The background screening value is twice the average of detected concentrations for inorganic analytes. FDEP GCTL = Florida Department of Environmental Protection, Groundwater Cleanup Target Levels, Chapter 62-777 FAC, May 26, 1999. 3 FEDMCL = Federal Maximum Contaminant Levels, Primary Drinking Water Regulations and Health Advisories, February 1996. RBC = Risk-Based Concentration Table, USEPA Region III, May 1996, R.L. Smith. RBC for chromium is based on chromium VI. RBC for lead is not available, value is treatment technology action limit for lead in drinking water distribution system identified in Drinking Water Standards and Health Advisories (USEPA, 1995). For essential nutrients (calcium, magnesium, potassium) screening values were derived based on recommended daily allowances (RDAs). s = secondary standard st = systemic toxicant p = primary standard o = organoleptic mg/L = milligrams per liter. μg/L = micrograms per liter. n = noncarcinogenic effects c = carcinogenic effects ND = Not determined. NA = Not Analyzed.bls = below land surface OSWER = Office of Solid Waste and Emergency Response. USEPA = U.S. Environmental Protection Agency. FDEP = Florida Department of Environmental Protection J = Reported concentration is an estimated quantity. B = Reported concentration is between the instrument detection limit and the contract required detection limit. Bold/shaded values indicate exceedance of regulatory guidance and background. Blank space indicates analyte/compound was not detected at the reporting limit.

NOTES:

APPENDIX C

SUMMARY OF ANALYTICAL RESULTS

- Table C-1 Summary of Analytical Results in Surface Soil
 Table C-2 Summary of Analytical Results in Subsurface Soil
 Table C-3 Summary of Analytical Results in Groundwater

TABLE C-1

SUMMARY OF ANALYTICAL RESULTS IN SURFACE SOIL

Sample II			4250		42S00	201D	42S00301		
Lab ID	C7G100		C7G100	151023	C7G100	151024	C7G100		
Sampling Date	9-Ju	i-97	9-Ju	I-97	9-Jui	-97	9-Jul		
Volatile organics, ug/kg				- 5		T		Ť	
1,1,1-Trichloroethane		11 U		0 U	1	0 U	1	1 U	
1,1,2,2-Tetrachloroethane		1 U	1	0 U	1	0 U		1 U	
1,1,2-Trichloroethane		1 U	1	0 U		0 UJ		10	
1,1-Dichloroethane		1 U	1	0 U	1	0 U		1 U	
1,1-Dichloroethene	1	1 U	1	0 U		οU		1 U	
1,2-Dichloroethane	1	1 U	1	0 U	1	οU		1 U	
1,2-Dichloroethene (total)	1	1 U	1	0 U		0 U	1		
1,2-Dichloropropane	1	1 U	1	0 U		οU	1		
2-Butanone	1	1 UJ	1	0 UJ		וטס	1.		
2-Hexanone	1	1 UJ		0 UJ		טטט	1.		
4-Methyl-2-pentanone	1	1 U		0 U		O U	1		
Acetone	1	1 UJ		ס טט		עט		ı UJ	
Benzene	1	1 U	1	οU		U	11		
Bromodichloromethane	1	1 U		οU	 	טוס		U	
Bromoform	1	1 U		טט		וט		U	
Bromomethane	1	1 UJ	10	ט ט		טט		UJ	
Carbon disulfide	1	1 UJ	10	UJ		וטט	11		
Carbon tetrachloride	1	1 U	10	U		U	11		
Chlorobenzene	1	1 U	10	U		Ü	11	_	
Chloroethane	1	IU		Ü		U		U	
Chloroform	1	U		U		U +	11		
Chioromethane	1	UJ		וח		UJ	11		
sis-1,3-Dichloropropene	1	I U		U		U	11	+	
Dibromochloromethane	1.	U		U		U		U	
thylbenzene	1.	U	10	Ū	10	1 -	11		
Methylene chloride	11	U	10	UJ		UJ	11	_	
Styrene	11	U	10	U	10		11		
etrachloroethene	11	U		Ū	10		11	1-	
oluene	11	U		Ü	10		11		
ans-1,3-Dichloropropene	11	U		U	10		11		
richloroethene	11	υ	10		10		11		
inyl chloride	11	UJ		UJ	10			UJ	
ylene (total)	11	U	10		10		11	U	
emivolatile organics, ug/kg				-		-		U	
,2,4-Trichlorobenzene	380	U	340		340	-	250		
2-Dichlorobenzene	380		340	1	340		350 350		
3-Dichlorobenzene	380	U	340		340		350		
4-Dichlorobenzene	380		340						
2'-oxybis(1-Chloropropane)	380		340		340 340		350		
4,5-Trichlorophenol	920		830		830		350		
4,6-Trichlorophenol	380		340		340		850		
4-Dichlorophenol	380		340				350		
4-Dimethylphenol	380		340		340		350		
4-Dinitrophenol	920		830		340		350		
4-Dinitrotoluene	380		340		830		850		
6-Dinitrotoluene	380				340		350		
Chloronaphthalene	380		340		340		350		
Chlorophenol	380		340		340		350		
Methylnaphthalene	380		340		340		350		
Methylphenol	380		340 340		340	ט ט	350 350		

Sample ID	42S00101		4250020)1	42S0020		4250030	
Lab ID		26	C7G10015	1023	C7G10015	1024	C7G100151	1025
Sampling Date	9-Jul-97		9-Jul-9		9-Jul-9	7	9-Jul-97	
-Nitroaniline	920 U		830	U	830	U	850	
-Nitrophenol	380 U		340	U	340		350	
3'-Dichlorobenzidine	380 U	·	340	U	340	U	350	
-Nitroaniline	920 U		830	U	830	U	850	
,6-Dinitro-2-methylphenol	920 U		830	U	830		850	
-Bromophenyl-phenylether	380 U		340	U	340	U	350	
-Chloro-3-methylphenol	380 U		340		340	U	350	
-Chloroaniline	380 U		340		340	U	350	U
-Chlorophenyl-phenylether	380 U		340		340	U	350	
	380 U		340	U	340	U	350	
-Methylphenol -Nitroaniline	920 L		830	U	830	U	850	U
	920 L		830	U	830	U	850	
I-Nitrophenol	380 L		340		340	U	350	U
Acenaphthene	220 J		91		85		350	U
Acenaphthylene	69 J		340		340	U	350	J
Anthracene	160 J		39		70	J	350	U
Benzo(a)anthracene	300 J		140		130	J	350	υ
Benzo(a)pyrene	430		260		230	1	350	U
Benzo(b)fluoranthene	59	1	35	1	340	UJ	350	U
Benzo(g,h,i)perylene	390		170		170	1	350	U
Benzo(k)fluoranthene	380 (1	340		340		350	U
bis(2-Chloroethoxy)methane	380 (340		340		350	U
bis(2-Chloroethyl)ether	380 (340			UJ	350	U
bis(2-Ethylhexyl)phthalate	380		340		340		350	U
Butylbenzylphthalate	380		340		340		350	U
Carbazole	440	<u> </u>	150		200		350	U
Chrysene	380	11	340		340		350	Ū
Di-n-butylphthalate	380		340		340		350	U
Di-n-octylphthalate	380		340		340	1 -	350	U
Dibenz(a,h)anthracene	380		340		340		350	
Dibenzofuran	380			υ	340		350	
Diethylphthalate	380			U	340		350	
Dimethylphthalate	570	U	220		200		350	
Fluoranthene	380) U		บ	350	
Fluorene				טוט		טוס	350	
Hexachlorobenzene	380 380			טט		טט	350	
Hexachlorobutadiene				טט		טוס	350	
Hexachlorocyclopentadiene	380			טט		טט	350	
Hexachloroethane	380			9 J		5 J		U
Indeno(1,2,3-cd)pyrene	84					U		U
Isophorone	380			0 U		טט		טפ
N-Nitroso-di-n-propylamine	380			O U		טט		טט
N-Nitrosodiphenylamine	380			0 U				טט
Naphthalene	380			0 U		0 U		0 U
Nitrobenzene	380			0 U		0 0		0 U
Pentachlorophenol	920			0 0		0 U		
Phenanthrene	220			1 J		6 J		0 U
Phenol	380			0 U	1	0 U		0 U
Pyrene	460	<u> </u>	11	<u>0 1</u>	15	0 J	35	<u>0 U</u>
Inorganics, mg/kg					<u> </u>	_		_
Aluminum	1020		157		165		148	
Antimony	3.2	U	2	9 U	2	9 U		3 U

Table C-1. Summary of Surface Soil Analytical Results Study Area 42

Sampi				42500	201	425002	01D	42S003	301
	b ID	C7G1001	51026	C7G1001	51023	C7G100151024			
Sampling I	Date	9-Jul-	97	9-Jul-		9-Jul-		9-Jul-9	
Arsenic		1.2	J	1.5	J		J	0.49	
Barium		15	J	10.5		10.6		3.2	
Beryllium		0.07	U	0.05		0.06		0.06	
Cadmium		0.59	U	0.94		1.5		0.55	
Calcium		2140		2430		2730	1	2690	
Chromium		2.6		3.9		4.2			
Cobalt		0.72		0.65		0.65	i	1.8	
Copper		6.9		24.8	I	21.1	0	0.66	
Iron		548		674		618		0.91	J
Lead		125		191	 	172		483	
Magnesium	\neg	86.2		97.1	-	112		12	
Manganese	_	19.5		16.2			3	81	J
Mercury		0.23	1	0.1	111	15.8		4.7	
Nickel		1.9		1.8		0.1		0.11	
Potassium		74.1		97.2		1.8		1.8	
Selenium	-	0.82	_	0.62		133		80.6	-
Silver		0.55		0.52		0.63		0.64	
Sodium		108		51.1		0.5		0.51	
Thallium		0.7		0.75		49		27.9	
Vanadium	-+	2.2		1.6		0.79		0.58	_
Zinc	-+	107	-	73.2	J	1.8	J	1.2	
General Chemistry, mg/kg	\rightarrow	107		13.2		75.4		5.6	U]
TRPH		260		100	+				
		200		100	U	NA		110	υl

Appendix C Table C-1a. Summary of Surface Soil Analytical Results Supplemental Sampling - Polyaromatic Hydrocarbons Study Area 42

Sample ID	42S004	01	42S0040	1D	425005	01	42S006	01	425007	01	42S008	01	425009	01	4280100	01
Lab ID	2701420	01	2701420	02	2701420	03	2701420	04	2701420	05	2701420	06	2701420	07	2701420	80
Sampling Date	26-Feb-	98	26-Feb-	98	26-Feb-	98	26-Feb-	98	26-Feb-	98	26-Feb-	98	26-Feb-	98	26-Feb-	98
Polyaromatic Hydrocarbons, ug	J∕kg															
1-Methylnaphthalene	380	U	390	U	370	U	180		180		720		700		380	
2-Methylnaphthalene	380	J	390	U	370	U	180	U	180		720		700		380	
Acenaphthene	380	U	390	υ	370	U	180	U	180	U	720		700		380	
Acenaphthylene	380	U	390	U	370	U	180	U	180	U	720		700		380	
Anthracene	380	U	390	U	370	U	180	U	180	U	720	U	700		380	
Benzo(a)anthracene	38	U	38	U	36	U	18	J	17	U	71	U	70		38	
Benzo(a)pyrene	67		65		36	U	18	U	17	U	100		70	U	38	
Benzo(b)fluoranthene	77		76		36	U .	18	Ū	17	U	120		70	U	38	
Benzo(g,h,i)perylene	81		82		36	U	18	U	17	U	130		70	U	38	U
Benzo(k)fluoranthene	35		30		19	U	9	Ù	9	U	50		36	U	20	
Chrysene	63		62		36	U	18	Ü	17	U	110		70	U	38	
Dibenz(a,h)anthracene	38	U	38	U	36	U	18	U	17	U	71	U	70	U	38	
Fluoranthene	83		110		36	J	18	U	17	U	71	د	70		38	
Fluorene	380	U	390	U	370	U	180	U	180	U	720	U	700		380	
Indeno(1,2,3-cd)pyrene	38	U	38	U	36	U	18	U	17	U	99	L		U,	38	
Naphthalene	380	U	390	U	370	U	180	U	180	U	720	U	700		380	
Phenanthrene	380	U	390	U	370	U	180	Ū	180	U	720	U	700		380	
Pyrene	89		89		36	U	18	U	17	U	130		70	U	38	U

Notes for Summary of Analytical Results Tables Study Area 42

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Naval Training Center, Orlando Orlando Florida

NA = Identified parameter not analyzed. Sample ID = Sample Identifier Lab ID = Laboratory identifier

Units:

mg/kg milligram per kilogram ug/kg microgram per kilogram mg/L milligram per liter ug/L microgram per liter

The following standard analytical data qualifiers have the following definitions:

- U The analyte/compound was analyzed for but was not detected above the reported sample quantitation limit.

 The number preceding the U qualifier is the reported sample quantitation limit.
- J The analyte/compound was positively identified and the associated numerical value is an estimated concentration of the analyte/compound in the sample.
- UJ The analyte/compound was not detected above the reported sample quantitation limit.

 The reported quantitation limit, however, is approximate and may or may not represent the actual limit of quantitation necessary to accurately measure the analyte/compound in the sample.
- R The sample results are rejected during data validation because of serious deficiencies in meeting quality control criteria.
- B Reported concentration is between the instrument detection limit (IDL) and the contract required detection limit (CRDL).

 The "B" qualifier is typically changed to a "J" (estimated) qualifier following data validation, which is currently pending for groundwater analytical results.

TABLE C-2

SUMMARY OF ANALYTICAL RESULTS IN SUBSURFACE SOIL

Sample ID		42B00201	42B00202	42B00301	42B00401	42B00402
Lab ID	1 3. 3. 30. 30. 30.		C7G100151029	C7G100151027	C7G100151030	C7G10015103
Sampling Date	9-Jul-97	9-Jul-97	9-Jul-97	9-Jul-97	9-Jul-97	9-Jul-97
Volatile organics, ug/kg	at a					
1,1,1-Trichloroethane	12 U	11 U	11 U	11 U	11 U	11 U
1,1,2,2-Tetrachloroethane	12 U	11 U	11 U	11 U	11 U	11 U
1,1,2-Trichloroethane	12 U	11 U	11 U	11 U	11 U	11 U
1,1-Dichloroethane	12 U	11 U	11 U	11 U	11 U	11 U
1,1-Dichloroethene	12 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloroethane	12 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloroethene (total)	12 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloropropane	12 U	11 U	11 U	11 U	11 U	11 U
2-Butanone	12 UJ	11 U	11 UJ	11 UJ	11 UJ	11 UJ
2-Hexanone	12 UJ	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ
4-Methyl-2-pentanone	12 U	11 U	11 U	11 U	11 U	11 U
Acetone	12 UJ	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ
Benzene	12 U	11 U	11 U	11 U	11 U	11 U
Bromodichloromethane	12 U	11 U	11 U	11 U	11 U	11 U
Bromoform	12 U	11 U	11 U	11 U	11 U	11 U
Bromomethane	12 UJ	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ
Carbon disulfide	12 UJ	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ
Carbon tetrachloride	12 U	11 U	11 U	11 U	11 U	11 U
Chiorobenzene	12 U	11 U	11 U	11 U	11 U	11 U
Chloroethane	12 U	11 U	11 U	11 U	11 U	11 U
Chloroform	12 U	11 U	11 U	11 U	11 U	11 U
Chloromethane	12 UJ	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ
cis-1,3-Dichloropropene	12 U	11 U	11 U	11 U	11 U	11 U
Dibromochloromethane	12 U	11 U	11 U	11 U	11 U	11 U
Ethylbenzene	12 U	11 U	11 U	11 U	11 U	11 U
Methylene chloride	12 U	11 U	11 U	11 U	11 U	11 U
Styrene	12 U	11 U	11 U	11 U	11 U	11 U
Tetrachioroethene	12 U	11 U	11 U	11 U	11 U	11 U
l'oluene	12 U	11 U	11 U	11 U	11 U	11 U
rans-1,3-Dichloropropene	12 U	11 U	11 U	11 U	11 U	11 U
Trichloroethene	12 U	11 U	11 U	11 υ	11 U	11 U
/inyl chloride	12 UJ	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ
(ylene (total)	12 U	11 U	11 U	11 U	11 U	11 U
Semivolatile organics, ug/kg						
,2,4-Trichlorobenzene	410 U	350 R	350 U	350 U	350 U	360 U
,2-Dichlorobenzene	410 U	350 R	350 U	350 U	350 U	360 U
,3-Dichlorobenzene	410 U	350 R	350 U	350 U	350 U	360 U
,4-Dichlorobenzene	410 U	350 R	350 U	350 U	350 U	360 U
,2'-oxybis(1-Chloropropane)	410 U	350 R	350 U	350 U	350 U	360 U
,4,5-Trichlorophenol	1000 U	840 U	840 U	850 U	850 U	870 U
,4,6-Trichlorophenol	410 U	350 U	350 U	350 U	350 U	360 U
,4-Dichlorophenol	410 U	350 U	350 U	350 U	350 U	360 U
,4-Dimethylphenol	410 U	350 U	350 U	350 U	350 U	360 U
,4-Dinitrophenol	1000 U	840 U	840 U	850 U	850 U	870 U
,4-Dinitrotoluene	410 U	350 R	350 U	350 U	350 U	360 U
,6-Dinitrotoluene	410 U	230 J	350 U	350 U	350 U	360 U
-Chloronaphthalene	410 U	350 R	350 U	350 U	350 U	360 U
-Chlorophenol	410 U	350 U	350 U	350 U	350 U	
-Methylnaphthalene	410 U	350 R	350 U	350 U	350 U	360 U
-Methylphenol	410 U	350 U	350 U	350 U	350 U	360 U

Sample ID	42B00101	42B00201	42800202	42B00301	42B00401	42B00402
Lab ID		C7G100151028	C7G100151029	C7G100151027	C7G100151030	C7G100151031
Sampling Date	9-Jul-97	9-Jul-97	9-Jul-97	9-Jul-97	9-Jul-97	9-Jul-97
2-Nitroaniline	1000 U	840 R	840 U	850 U	850 U	870 U
2-Nitrophenol	410 U	350 U	350 U	350 U	350 U	360 U
3.3'-Dichlorobenzidine	410 U	350 R	350 U	350 U	350 U	360 U
3-Nitroaniline	1000 U	840 R	840 U	850 U	850 U	870 U
4,6-Dinitro-2-methylphenol	1000 U	840 U	840 U	850 ป	850 U	870 U
4-Bromophenyl-phenylether	410 U	350 R	350 U	350 U	350 U	360 U
4-Chloro-3-methylphenol	410 U	350 U	350 U	350 U	350 U	360 U
4-Chloroaniline	410 U	350 R	350 U	350 U	350 U	360 U
4-Chlorophenyl-phenylether	410 U	350 R	350 U	350 U	350 U	360 U
4-Methylphenol	410 U	350 U	350 U	350 U	350 U	360 U
4-Nitroaniline	1000 U	840 R	840 U	850 U	850 U	870 U
4-Nitrophenol	1000 U	840 U	840 U	850 U	850 U	870 U
Acenaphthene	410 U	350 R	350 U	350 U	350 U	360 U
Acenaphthylene	410 U	350 R	350 U	350 U	350 U	360 U
Anthracene	410 U	350 R	350 U	350 U	350 U	360 U
Benzo(a)anthracene	410 U	350 R	350 U	350 U	350 U	360 U
Benzo(a)pyrene	410 U	350 R	350 U	350 U	350 U	360 U
Benzo(b)fluoranthene	410 U	350 R	350 U	350 U	350 U	360 U
Benzo(g,h,i)perylene	410 U	350 R	350 U	350 U	350 U	360 U
Benzo(k)fluoranthene	410 U	350 R	350 U	350 U	350 U	360 U
bis(2-Chloroethoxy)methane	410 U	350 R	350 U	350 U	350 U	360 U
bis(2-Chloroethyl)ether	410 U	350 R	350 U	350 U	350 U	360 U
bis(2-Ethylhexyl)phthalate	410 U	350 R	350 U	350 U	350 U	360 U
Butylbenzylphthalate	410 U	350 R	350 U	350 U	350 U	360 U
Carbazole	410 U	350 R	350 U	350 U	350 U	360 U
Chrysene	410 U	350 R	350 U	350 U	350 U	360 U
Di-n-butylphthalate	410 U	350 R	350 U	350 U	350 U	360 U
Di-n-octylphthalate	410 U	350 R	350 U	350 U	350 U	360 U
Dibenz(a,h)anthracene	410 U	350 R	350 U	350 U	350 U	360 U
Dibenzofuran	410 U	350 R	350 U	350 U	350 U	360 U
Diethylphthalate	410 U	350 R	350 U	350 U	350 U	360 U
Dimethylphthalate	410 U	350 R	350 U	350 U	350 U	360 U
Fluoranthene	410 U	350 R	350 U	350 U	350 U	360 U
Fluorene	410 U	350 R	350 U	350 U	350 U	360 U
Hexachlorobenzene	410 U	350 R	350 U	350 U	350 U	360 U
Hexachlorobutadiene	410 U	350 R	350 U	350 U	350 U	360 U
Hexachlorocyclopentadiene	410 U	350 R	350 U	350 U	350 U	360 U
Hexachloroethane	410 U	350 R	350 U	350 U	350 U	360 U
Indeno(1,2,3-cd)pyrene	410 U	350 R	350 U	350 U	350 U	360 U
Isophorone	410 U	350 R	350 U	350 U	350 U	360 U
N-Nitroso-di-n-propylamine	410 U	350 R	350 U	350 U	350 U	360 U
N-Nitrosodiphenylamine	410 U	350 R	350 U	350 U	350 U	360 U
Naphthalene	410 U	. 350 R	350 U	350 U	350 U	360 U
Nitrobenzene	410 U	350 R	350 U	350 U	350 U	360 U
Pentachlorophenol	1000 U	840 U	840 U	850 U	850 U	870 U
Phenanthrene	410 U	350 R	350 U	350 U	350 U	360 U
Phenol	410 U	350 U	350 U	350 U	350 U	360 U
Pyrene	410 U	350 R	350 U	350 U	350 U	360 U
Pesticides/PCBs, ug/kg				1.		
4,4'-DDD	4.1 U	3.4 U	3.5 U	3.5 U	3.5 U	3.6 U
4,4'-DDE	4.1 U	3.4 U	3.5 U	3.5 U	3.5 U	3.6 U

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Sample ID		42B00201	42B00202	42B00301	42B00401	42B00402
Lab ID			C7G100151029	C7G100151027	C7G100151030	C7G10015103
Sampling Date	9-Jul-97	9-Jul-97	9-Jul-97	9-Jul-97	9-Jul-97	9-Jul-97
4,4'-DDT	4.1 U	3.4 U	3.5 U	3.5 U	3.5 U	3.6 U
Aldrin	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
alpha-BHC	2.1 U.		1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
alpha-Chlordane	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Aroclor-1016	41 U	34 U	35 U	35 U	35 U	36 U
Aroclor-1221	84 U	70 U	71 U	71 U	71 U	73 U
Aroclor-1232	41 U	34 U	35 U	35 U	35 U	36 U
Aroclor-1242	41 U	34 U	35 U	35 U	35 U	36 U
Aroclor-1248	41 U	34 U	35 U	35 U	35 U	36 U
Aroclor-1254	41 U	34 U	35 U	35 U	35 U	36 U
Arocior-1260	41 U	34 U	35 U	35 U	35 U	36 U
beta-BHC	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
delta-BHC	2.1 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
Dieldrin	4.1 U	3.4 U	3.5 U	3.5 U	3.5 U	3.6 U
Endosulfan I	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Endosulfan II	4.1 U	3.4 U	3.5 U	3.5 U	3.5 U	3.6 U
Endosulfan sulfate	4.1 U	3.4 U	3.5 U	3.5 U	3.5 U	3.6 U
Endrin	4.1 U	3.4 U	3.5 U	3.5 U	3.5 U	3.6 U
Endrin aldehyde	4.1 U	3.4 U	3.5 U	3.5 U	3.5 U	3.6 U
Endrin ketone	4.1 U	3.4 U	3.5 U	3.5 U	3.5 U	3.6 U
gamma-BHC (Lindane)	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
gamma-Chlordane	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Heptachlor	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Heptachlor epoxide	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Methoxychlor	21 U	18 U	18 U	18 U	18 U	18 U
Toxaphene "	210 U	180 U	180 U	180 U	180 U	180 U
norganics, mg/kg Aluminum						
	12100	549	245	1330	614	696
Antimony	3.5 U	2.9 U	3 U	3 U	3 U	3.1 U
Arsenic	0.64 J	0.48 U	0.49 U	0.49 U	0.49 U	0.5 U
Barium Beryllium	1.5 J	1.8 J	0.63 J	2.1 J	1.6 J	1.6 J
Cadmium	0.15 U	0.05 U	0.03 U	0.03 U	0.03 U	0.05 U
Calcium Calcium	0.65 U	0.54 U	0.54 U	0.55 U	0.55 U	0.56 U
Chromium	350 J	358 J	71.1 U	8620	225 U	285 U
Cobalt	10.6	1.2 J	0.62 J	2 J	1.4 J	1.5 J
Copper	0.78 U	0.65 U	0.66 U	0.66 U	0.66 U	0.68 U
ron	0.6 J	0.44 J	0.31 U	0.41 J	0.36 J	0.32 U
.ead	495	129	43.3	320	196	421
	7.4	2.2	0.75	2.1	1.6	1.8
Magnesium	10.8 U	21.7 U	7.7 U	123 J	18.6 U	20.5 U
Manganese	0.64 J	0.98 J	0.55 J	1.9 J	0.83 J	0.92 J
Mercury	0.13 UJ	0.1 UJ	0.11, UJ	0.11 UJ	0.11 UJ	0.11 UJ
lickel	2.1 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Potassium	137 J	115 J	68 U	68.4 U	87.2 J	104 J
Selenium	0.82 J	0.68 J	0.63 ป	0.63 U	0.63 ป	0.65 U
Silver	0.6 U	0.65 U	0.5 U	0.51 U	0.51 U	0.52 U
Sodium	42.6 U	30.1 U	23.9 U	27.1 U	26.8 U	31.7 U
hallium	0.69 U	0.57 U	0.57 U	0.58 U	0.58 U	0.59 U
/anadium	3.1 J	0.33 U	0.34 U	· 1.3 J	0.44 J	1.2 J
inc	5.4 U	3 U	2.6 U	2.2 U	3.2 U	3.3 U

Sample ID	42B00101	42B00201	42B00202	42B00301	42B00401	42B00402
Lab ID	C7G100151032	C7G100151028	C7G100151029	C7G100151027	C7G100151030	C7G100151031
Sampling Date		9-Jul-97	9-Jul-97	9-Jul-97	9-Jul-97	9-Jul-97
TRPH	130 U	100 U	110 U	110 U	110 U	110 U

Notes for Summary of Analytical Results Tables Study Area 42

Naval Training Center, Orlando Orlando Florida

NA = Identified parameter not analyzed. Sample ID = Sample Identifier Lab ID = Laboratory identifier

Units:

mg/kg milligram per kilogram ug/kg microgram per kilogram mg/L milligram per liter ug/L microgram per liter

The following standard analytical data qualifiers have the following definitions:

- U The analyte/compound was analyzed for but was not detected above the reported sample quantitation limit.

 The number preceding the U qualifier is the reported sample quantitation limit.
- J The analyte/compound was positively identified and the associated numerical value is an estimated concentration of the analyte/compound in the sample.
- UJ The analyte/compound was not detected above the reported sample quantitation limit.

 The reported quantitation limit, however, is approximate and may or may not represent the actual limit of quantitation necessary to accurately measure the analyte/compound in the sample.
- R The sample results are rejected during data validation because of serious deficiencies in meeting quality control criteria.
- Reported concentration is between the instrument detection limit (IDL) and the contract required detection limit (CRDL).

 The "B" qualifier is typically changed to a "J" (estimated) qualifier following data validation, which is currently pending for groundwater analytical results.

TABLE C-3 SUMMARY OF ANALYTICAL RESULTS IN GROUNDWATER

		Orlan	do, FL			
Sample ID	42G00101	42H00101	42G00201	42H00201	42G00301	42H00301
LabiD	S776329*1	S776329*4	S776329*2	S776329*5	S776329*3	S776329*6
Sampling Date	6-Nov-97	6-Nov-97	6-Nov-97	6-Nov-97	6-Nov-97	6-Nov-97
Volatile Organics, ug/L						
1,1,1-Trichloroethane	1 U	NA NA	1 U	NA NA	1 U	NA .
1,1,2,2-Tetrachloroethane	1 U	NA NA	1 U	NA	1 U	NA
1,1,2-Trichloroethane	1 U	NA NA	1 U	NA	1 U	NA
1,1-Dichloroethane	1 U	NA NA	1 U	NA	1 U	NA
1,1-Dichloroethene	1 U	NA	1 U	NA	1 U	NA
1,2-Dibromo-3-chloropropane	1 U	NA NA	1 U	NA NA	1 U	NA
1,2-Dibromoethane (EDB)	1 U	NA NA	1 U	NA	1 U	NA
1,2-Dichloroethane	1 U	NA	1 U	NA NA	1 U	NA
1,2-Dichloropropane	1 U	NA NA	1 U	NA NA	1 U	NA
2-Butanone	5 U	NA	5 U	NA	5 U	NA
2-Hexanone	5 U	NA	5 U	NA	5 U	NA
4-Methyl-2-pentanone	5 U	NA	5 U	NA	5 U	NA
Acetone	5 U	NA	5 U	NA NA	5 U	NA
Benzene	1 U	NA	1 U	NA	1 U	NA
Bromochloromethane	1 U	NA NA	1 U	NA NA	1 U	NA
Bromodichloromethane	1 U	NA	1 U	NA	1 U	NA
Bromoform	1 U	NA	1 U	NA NA	1 U	NA
Bromomethane	1 U	NA	1 U	NA	1 U	NA
Carbon disulfide	1 U	NA	1 U	NA NA	1 U	NA
Carbon tetrachloride	1 U	NA	1 U	NA	1 U	NA
Chlorobenzene	1 U	NA	1 U	NA NA	1 U	NA
Chlorodifluoromethane	1 U	NA	1 U	NA NA	1 U	NA
Chloroethane	1 U	NA	1 U	NA	1 U	NA
Chloroform	1 U	NA	1 U	NA NA	1 U	NA
Chloromethane	1 U	NA	1 U	NA NA	1 U	NA
cis-1,2-Dichloroethene	1 U	NA	1 U	NA NA	1 U	NA
cis-1,3-Dichloropropene	1 U	NA	1 U	NA NA	1 U	NA
Dibromochloromethane	1 U	NA	1 U	NA NA	1 U	NA
Dichlorodifluoromethane	1 U	NA	1 U	NA NA	1 U	NA
Ethylbenzene	1 U	NA	1 U	NA NA	1 U	NA
Methylene chloride	2 U	NA	2 U	NA .	2 U	NA
Styrene	1 U	NA	0.7 J	NA NA	1 U	NA
Tetrachloroethene	1 U	NA	1 U	NA NA	1 U	NA NA
Toluene	1 U	NA	1 U	NA	1 U	NA
trans-1,2-Dichloroethylene	1 U	NA	1 U	NA	1 U	NA NA
trans-1,3-Dichloropropene	1 U	NA NA	1 U	NA NA	1 U	NA NA
Trichloroethene	1 U	NA NA	1 U	NA NA	1 U	NA
Trichlorofluoromethane	1 U	NA NA	1 U	NA NA	1 U	NA NA
Vinyl chloride	1 U	NA NA	1 U	NA NA	1 U	NA
Xylene (total)	1 U	NA NA	1 U	NA NA	1 U	NA NA
Semivolatile organics, ug/L		 		101		197
1,2,4-Trichlorobenzene	11 U	NA	11 U	NA	11 U	NA
1,2-Dichlorobenzene	11 U	NA NA	11 U	NA NA	11 U	NA NA
1,3-Dichlorobenzene	11 U	NA NA	11 U	NA NA	11 U	NA NA
1,4-Dichlorobenzene	11 U	NA NA	11 U	NA NA	11 U	NA NA
2,2'-oxybis(1-Chloropropane)	10 U	NA NA	10 U	NA NA	10 U	NA NA
2,4,5-Trichlorophenol	25 U	NA NA	25 U	NA NA	25 U	NA NA
2,4,6-Trichlorophenol	10 U	NA NA	10 U	. NA	10 U	NA NA
2,4-Dichlorophenol	10 U	NA NA	10 U	NA NA	10 U	NA NA
	10 U	NA NA				
2,4-Dimethylphenol	IU U	N/A	10 U	NA	10 U	NA

		401400404	40000004	42H00201	42G00301	42H00301
Sample ID	42G00101	42H00101	42G00201		\$776329*3	\$776329*6
LabID	S776329*1	S776329*4	\$776329*2	\$776329*5	25 U	NA NA
,4-Dinitrophenol	25 U	NA	25 U	NA NA	10 U	NA NA
4-Dinitrotoluene	10 U	NA	. 10 U	NA NA	10 U	NA NA
,6-Dinitrotoluene	10 U	NA	10 U	NA NA	10 U	NA NA
2-Chloronaphthalene	10 U	NA	10 U	NA NA	10 U	NA NA
2-Chlorophenol	10 U	NA	10 U	NA NA	10 U	NA NA
2-Methylnaphthalene	10 U	NA NA	10 U	NA	10 U	NA NA
2-Methylphenol	10 U	NA NA	10 U	NA	25 U	NA NA
2-Nitroaniline	25 U	NA	25 U	NA		NA NA
2-Nitrophenol	10 U	NA	10 U	NA	10 U	NA NA
3,3'-Dichlorobenzidine	10 U	NA NA	10 U	NA	10 U 10 U	NA NA
3-Methylphenol/4-Methylphenol	10 U	NA	10 U	NA		NA NA
3-Nitroaniline	25 U	NA	25 U	NA .	25 U	NA NA
4.6-Dinitro-2-methylphenol	25 U	NA	25 U	NA	25 U	
4-Bromophenyl-phenylether	10 U	NA	10 U	NA	10 U	NA NA
4-Chioro-3-methylphenol	10 U	NA	10 U	NA NA	10 U	NA NA
4-Chloroaniline	10 U	NA	10 U	NA	10 U	NA NA
4-Chlorophenyl-phenylether	10 U	NA	10 U	NA NA	10 U	NA NA
4-Nitroaniline	25 U	NA	25 U	NA	25 U	NA NA
4-Nitrophenol	25 U	NA	25 U	NA	25 U	NA NA
Acenaphthene	10 U	NA NA	10 U	NA	10 U	NA
Acenaphthylene	10 U	NA	10 U	NA	10 U	NA
Anthracene	10 U	NA	10 U	NA .	10 U	NA
Benzo(a)anthracene	10 U	NA	10 U	NA	10 U	NA
Benzo(a)pyrene	10 U	NA	10 U	NA	10 U	NA
Benzo(b)fluoranthene	10 U	NA	10 U	NA	10 U	NA
Benzo(g,h,i)perylene	10 U	NA	10 U	NA NA	10 U	NA NA
Benzo(k)fluoranthene	10 U	NA	10 U	NA	10 U	NA
bis(2-Chloroethoxy)methane	10 U	NA	10 U	NA	10 U	NA
bis(2-Chloroethyl)ether	10 U	NA	10 U	NA	10 U	NA NA
bis(2-Ethylhexyl)phthalate	10 U	NA	10 U	NA	10 U	NA
Butylbenzylphthalate	10 U	NA	10 U	NA	10 U	NA
Carbazole	10 U	NA NA	10 U	NA	10 U	NA
Chrysene	10 U	NA NA	10 U	NA	10 U	NA
Di-n-butylphthalate	10 U	NA NA	10 U	NA	10 U	NA
Di-n-octylphthalate	10 U	NA NA	10 U	NA	10 U	NA
Dibenz(a,h)anthracene	10 U	NA	10 U	NA	10 U	NA
Dibenzofuran	10 U	NA	10 U	NA	10 U	NA
Diethylphthalate	10 U	NA NA	10 U	NA	10 U	NA
Dimethylphthalate	10 U	NA .	10 U	NA	10 U	NA
Fluoranthene	10 U	NA.	10 U	NA	10 U	NA
	10 U	NA NA	10 U	NA	10 U	NA
Fluorene Hexachiorobenzene	10 U	NA NA	10 U	NA	10 U	NA
Hexachlorobenzene Hexachlorobutadiene	10 U	NA NA	10 U	NA	10 U	NA
	10 U	NA NA	10 U	NA NA	10 U	NA
Hexachlorocyclopentadiene	10 U	NA NA	10 U	NA	10 U	NA
Hexachloroethane	10 U	NA NA	10 U	NA NA	10 U	NA
Indeno(1,2,3-cd)pyrene	10 U	NA NA	10 U	NA NA	10 U	NA
Isophorone	10 U	NA NA	10 U	NA NA	10 U	NA
N-Nitroso-di-n-propylamine	10 U	NA NA	10 U	NA NA	10 U	NA
N-Nitrosodiphenylamine		NA NA	10 U	. NA	0.3 J	NA
Naphthalene	10 U		10 U	NA NA	10 U	NA NA
Nitrobenzene Pentachlorophenol	10 U 25 U	NA NA	25 U	NA NA	25 U	NA NA

					do, FL				
Sample ID		00101		00101	42G	00201	42H00201	42G00301	4011225
LabID Phenanthrene	S776	329*1	\$770	5329*4	S776	329*2	S776329*5	\$776329*3	42H0030
Phenol		10 U		NA		10 U	NA NA	10 U	S776329
Pyrene		10 U		NA		10 U	NA NA	10 U	NA NA
		10 U		NA		10 U	NA NA	10 U	NA NA
Pesticides/PCBs, ug/L 4,4'-DDD								100	NA NA
4,4'-DDE).1 U		NA	C	.1 U	NA	- 04:	
4,4'-DDT).1 U		NA		.1 U	NA NA	0.1 U	NA NA
	().1 U		NA A		.1 U	NA NA	0.1 U	NA
Aldrin		05 U		VA		75 U	NA NA	0.1 U	NA NA
alpha-BHC	0.	05 U	1	VA)5 U	NA NA	0.05 U	NA
alpha-Chlordane	0.0	05 U	1	VA)5 U	NA NA	0.05 U	NA
Aroclor-1016		1 U		NA.		1 U	NA NA	0.05 U	NA NA
Aroclor-1221		2 U		IA		2 U	NA NA	1 U	NA
Aroclor-1232		1 U		A		10	NA NA	2 U	NA
Aroclor-1242		1 U		A		10		1 U	NA NA
Aroclor-1248		1 U		IA		1 U	NA	1 U	NA
Aroclor-1254		1 U		A		1 U	NA NA	1 U	NA
Aroclor-1260		1 U		A		1 0		1 U	NA
eta-BHC	0.0	5 U		Α		5 U	NA NA	1 U	NA
elta-BHC	0.0	5 U		A		5 U	NA NA	0.05 U	NA
Dieldrin	0.	1 U	N			1 0	NA	0.05 U	NA
ndosulfan I	0.0	5 U	N		0.0		NA	0.1 U	NA
ndosulfan II		1 U	N			1 U	NA	0.05 U	NA
ndosulfan sulfate		1 U	N.	- 1		ı U	NA	0.1 U	NA
ndrin		1 U	N.			U	NA NA	0.1 U	NA
ndrin aldehyde		1 U	N.			U	NA NA	0.1 U	NA
ndrin ketone	0.	ΙU	N.			U	NA NA	0.1 U	NA
amma-BHC (Lindane)	0.0		N.	.	0.05		NA	0.1 U	NA
amma-Chlordane	0.0		N/	-			NA	0.05 U	NA
eptachlor	0.12		N/		0.05		NA NA	0.05 U	NA
eptachlor epoxide	0.05	Ū	N/		0.12		NA	0.12 J	NA
ethoxychlor	0.5	U	N/		0.05	1	NA	0.05 U	NA
exaphene		U	N/	<u>-1</u>		U	NA NA	0.5 U	NA
organics, ug/L		 		`		U	NA NA	5 U	NA
uminum	489	+	193	B	1400	ļ			
ntimony	3.3	_		U	1120	1	294	1200	86 B
senic	3.6			U	3.3	1	3.3 U	3.3 U	3.3 U
rium	9.9		8.1		3.6		3.6 U	3.6 U	3.6 U
ryllium	0.2		0.2		19		10.4 B	9.1 B	4.4 B
dmium	0.6		0.2		0.2		0.2 U	0.2 U	0.2 U
lcium	10900				0.6	U	0.6 U	0.6 U	0.6 U
romium		υ	10700		10000		10000	5950	5820
balt		U		U	2		2 U	2.3 B	2 U
pper	2.2			U	1		1 U	1 U	1 U
n	236	-	2.2		2.2	U	2.5 B	2.2 U	2.2 U
ad	1.7	D	183	f	144		115	95.5 B	65.5 B
gnesium	599		1.2		1.2		1.2 U	1.2 U	1.2 U
nganese	13.9		587		363	В	370 B	544 B	537 B
rcury			13.4		15.5		15.5	3.8 B	4 B
kel	0.1		0.1	- 1	0.1		0.1 U	0.1 U	0.1 U
assium	2.3	1	2.3		2.3		2.3 U	2.3 U	2.3 U
enium	1440		1410		2180		. 2270 B	640 B	
er	2.6		2.6		2.6	J	2.6 U	2.6 U	646 B
-	3 1	J	3		3 (3 U	3 U	2.6 U

									1		1	
Sample ID	42G00101 S776329*1		42H00101 \$776329*4		42G00201 S776329*2		42H00201 S776329*5		42G00301 S776329*3		42H00301 S776329*6	
LabiD												
Sodium	1820	В	2030	В	3230	В	3430	В	1930	В	2560	1
Thallium	4.7		4.7	U	4.7	U	4.7	U	4.7	U	4.7	U
Vanadium		В		U	2.7	В	2.6	В	1.7	U	1.7	U
Zinc	10.7		6.9		2.9	В	3.3	В	2.9	В	3.7	В
	10.7			-		Ε		 	1			
General Chemistry, mg/L				<u> </u>	<u> </u>	ļ.,	ļ	<u> </u>			ALA.	+
Suspended Solids	5	U	NA.	1	5	U	NA NA		1	U	NA NA	
TRPH	1	U	iNA		1	U	NA	<u> </u>	1	U	NA.	

Notes for Summary of Analytical Results Tables Study Area 42

Naval Training Center, Orlando Orlando Florida

NA = Identified parameter not analyzed. Sample ID = Sample Identifier Lab ID = Laboratory identifier

Units:

mg/kg milligram per kilogram ug/kg microgram per kilogram mg/L milligram per liter ug/L microgram per liter

The following standard analytical data qualifiers have the following definitions:

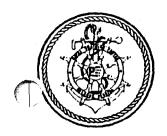
- U The analyte/compound was analyzed for but was not detected above the reported sample quantitation limit.

 The number preceding the U qualifier is the reported sample quantitation limit.
- J The analyte/compound was positively identified and the associated numerical value is an estimated concentration of the analyte/compound in the sample.
- UJ The analyte/compound was not detected above the reported sample quantitation limit.

 The reported quantitation limit, however, is approximate and may or may not represent the actual limit of quantitation necessary to accurately measure the analyte/compound in the sample.
- R The sample results are rejected during data validation because of serious deficiencies in meeting quality control criteria.
- B Reported concentration is between the instrument detection limit (IDL) and the contract required detection limit (CRDL).

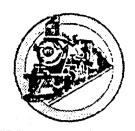
 The "B" qualifier is typically changed to a "J" (estimated) qualifier following data validation, which is currently pending for groundwater analytical results.

APPENDIX D INTERIM REMEDIAL ACTION FACTSHEET



Naval Training Center Orlando, Florida

Proposed Interim Remedial Action Study Area 42



This fact sheet was developed to inform interested citizens about the Naval Training Center (NTC). Orlando environmental program. Fact sheets will be distributed periodically to keep the community informed. Additional copies of these fact sheets can be obtained by calling the NTC, Orlando Public Affairs Office at (40°) 646-4430.

Site Description

Study Area (SA) 42 is located on the Main Base of NTC, Orlando, south of Iwo Jima Street and west of Leahy Avenue (Figure 1). The site includes Building 2055, which was built in 1943, and used as classrooms and laboratories. Currently, the eastern half of the building is occupied by Morale, Welfare, and Recreation, and used for vending machine maintenance. The western half of the building contains the NTC air conditioning maintenance contractor mechanical shops, administrative offices, and storage rooms. Areas of environmental interest at the site include flammable storage lockers at the northwest and southeast corners of the building, an air conditioner condenser pad on the east end of the building where stained concrete was observed. and the concrete sumps on the north side of the building Figure 2). Sinks in the laboratories may have been bnnected to the concrete sumps located on the north side of the buildings.

Site Investigations

Investigations at SA 42 included

- a site walkover.
- a review of historical documents.
- · a review of aerial photographs, and
- soil and groundwater sampling.

Other than the stain on the air conditioner condenser pad, there were no indications of environmental releases or stressed vegetation around the perimeter of Building 2055.

Surface soil samples were collected at or near the following locations:

- the flammables storage locations,
- the stained concrete pad, and
- grassy areas around the site.

Subsurface soil and groundwater samples were taken om near the flammables storage locations and the nerete sumps.

Findings

Two of the surface soil samples had benzo (a) pyrene in amounts exceeding Florida guidelines for residential land use. The area of the base occupied by SA 42 is intended for a residential re-use scenario. Benzo (a) pyrene is fuel-

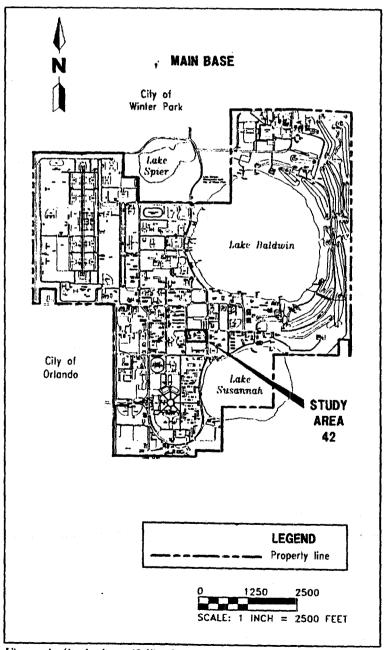


Figure 1. Study Area 42 Site Location Map

related and is often produced by incomplete burning of petroleum products. No contamination was detected in subsurface soil or groundwater.

Conclusions and Recommendations

The Navy, U.S. Environmental Protection Agency, and Florida Department of Environmental Protection have determined that an interim remedial action (IRA) is appropriate at SA 42 to protect human health. An IRA is an early cleanup of a specific portion of a site and can be performed before the whole site has been looked at. IRAs respond to environmental contamination of immediate concern and are sometimes the final action at a site. In this way, IRAs can help speed up the entire cleanup process.

What's Next?

Surface soil will be removed at the two locations that had benzo(a)pyrene in amounts exceeding Florida guidelines for residential land use. Each excavation will be approximately 10 feet in diameter and 1 foot deep. Samples will be collected from the walls or floor of each excavation to confirm that Florida guidelines for residential land use have been achieved. This approach is consistent with remedial actions at several other SAs that had minor exceedances of Florida guidelines for one or more compounds. Removal of

soils from the indicated areas will allow unrestricted use and will not affect future plans of the City of Orlando.

Opportunities for Public Comment

The public is invited to submit any questions or comments on the remedial action described in this fact sheet. Written or verbal comments should be directed to the NTC, Orlando Public Works Office (see phone number listed below). A public comment period will be announced soon in the Orlando Sentinel.

For More Information...

If you have questions about the Navy's action at SA 42, or on the environmental program at NTC, Orlando in general, please contact Mr. Wayne Hansel at the NTC, Orlando Public Works Office, (407) 646-5294. Reports on the work at SA 42 can be reviewed at these locations:

Orange County Public Library
Orlando Branch (2nd floor)
t Central Boulevard, Orlando, Florida 3

101 East Central Boulevard, Orlando, Florida 32801 (407) 425-4694

NTC, Orlando Public Works Department 1350 Grace Hopper Avenue, Orlando, Florida 32813 (407) 646-4735

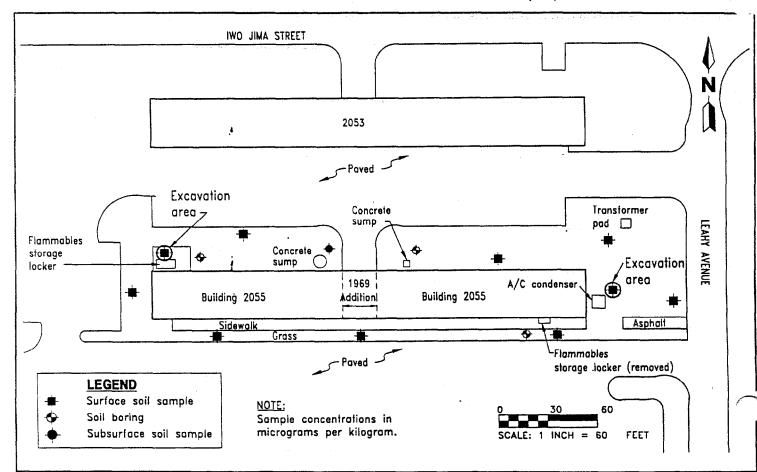


Figure 2. Study Area 42 Site Plan.

APPENDIX E

COMPLETION REPORT INTERIM REMEDIAL ACTION STUDY AREA 42, NTC ORLANDO

STUDY AREA 42

STUDY AREA 42

1. INTRODUCTION

1.1 STUDY AREA 42

SA 42 is located south of Iwo Jima Street and west Leahy Avenue on the Main Base, Naval Training Center, Orlando (Figure 1). The SA includes several buildings their associated grounds. PAH's were detected in north of Building 2056 and east of Building 2055 (figure 2).

1.2 SA 42 INTERIM REMEDIAL ACTION

SOUTHDIV tasked the DET to perform an IRA for this site. The objective of the IRA was to excavate and dispose of soil contaminated with PAHs. The excavation was to continue until the sampling program indicated with reasonable confidence that the concentrations of contaminants at the site were less than residential limits specified by FDEP SCG, dated 30 April 1998 or USEPA Region III, dated 01 October 1998, whichever specifies the stricter criteria.

1.2.1 SA 42 Interim Remedial Action Execution Summary

The execution of this IRA consisted of excavating an area approximately 12' x 10' to a depth of 1' at sample location 42S001 (Figure 3) and an area approximately 10' x 10' to a depth of 1' at sample location 42S002 (Figure 4). Soil removed from the site was characterized as non-hazardous and was sent to a treatment facility for incineration. A Confirmation sample was collected from each sidewall upon completion of the excavation and tested for PAHs. The results of these samples were all less than the RGOs except for the sample 2' north of Building 2056 (sample 99SPORT0161-7) as shown in Figure 3. The OPT was informed that sample 99SPORT0161-7 had a result of 0.456 parts per million of Benzo(a)pyrene. The OPT instructed the DET to excavate up to Building 2056 and to take an additional informational sample. The DET excavated an additional 2' x 10' to a depth of 1'and collected sample 99SPORT0191-1 as shown in Figure 3. The results of this sample were less than the RGOs.

2.0 INTERIM REMEDIAL ACTION EXCECUTION

2.1 ACTIONS PERFORMED BY THE INTERIM REMEDIAL ACTION WORK PLAN

Actions performed are listed below.

- Collection of waste characterization samples
- Excavation and disposal of an area approximately 10' x 10' x 1' and an area 12' x 10' x 1'
- Collection of confirmatory samples from each sidewall for analysis of PAHs
- Restoration of site by backfilling, grading to surrounding area, and seeding

2.2 OBSERVATIONS NOTES

2.2.1 Soil Conditions

From ground surface to the bottom of the excavation the soil was dark silty sand.

2.3 PLAN MODIFICATIONS AND JUSTIFICATION

Not relevant to Study Area it2.
RP Allen
11/19/99

Informed the OPT that sample SA35SA11 located along the north side of Building 2079 had a result of 6.4 parts per million of arsenic. The OPT instructed the DET not to excavate under Building 2079.— Informed the OPT that sample 99SPORT0161-7 had a result of 0.456 parts per million of Benzo(a)pyrene. The OPT instructed the DET to excavate up to Building 2056 and to take an additional informational sample. The DET excavated an additional 2' x 10' to a depth of 1'. Sample 99SPORT0191-1 is provided as the informational sample (Appendix G2).

3.0 INTERIM REMEDIAL ACTION OUTCOME

3.1 SITE CONDITIONS FOLLOWING COMPLETION OF WORK

Following completion of work, the DET had removed 11 tons of PAH contaminated soil. The site was backfilled, graded to surrounding area and seeded. Site photographs are included in Appendix G1.

4.0 SAMPLING

4.1 CONFIRMATION SAMPLING

Upon completion of work a confirmation sample was taken on each sidewall and tested for PAHs (Figures 3 & 4). See appendix G2 for sampling documentation.

4.2 WASTE CHARACTERIZATION SAMPLING

Waste characterization samples SA-42001 & SA-42002 were taken and analyzed for TCLP metals. See appendix G2 for sampling documentation.

5.0 WASTE GENERATION

5.1 Non-Hazardous Waste

A total of 11 tons of non-hazardous PAH contaminated soil was disposed of to a permitted treatment, storage and disposal facility. Waste Manifests are in appendix G3.

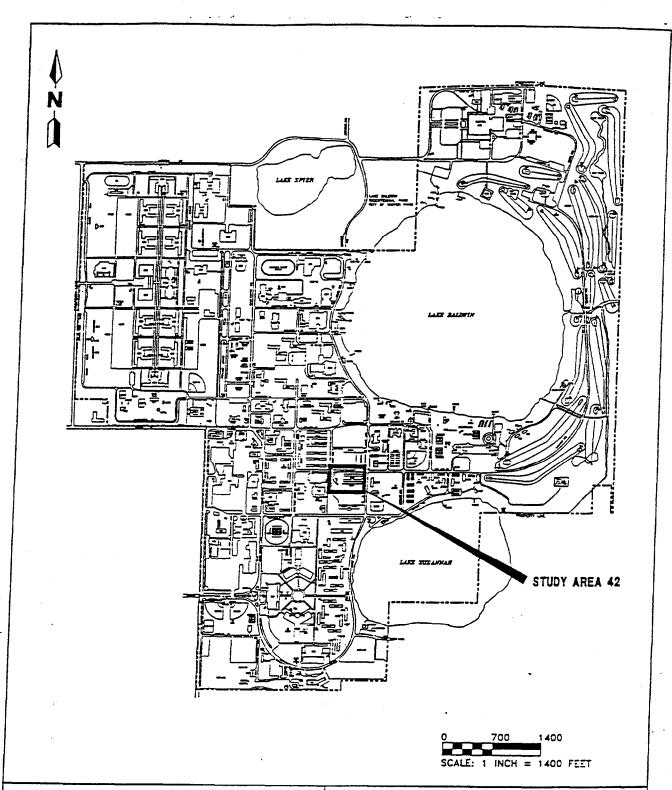


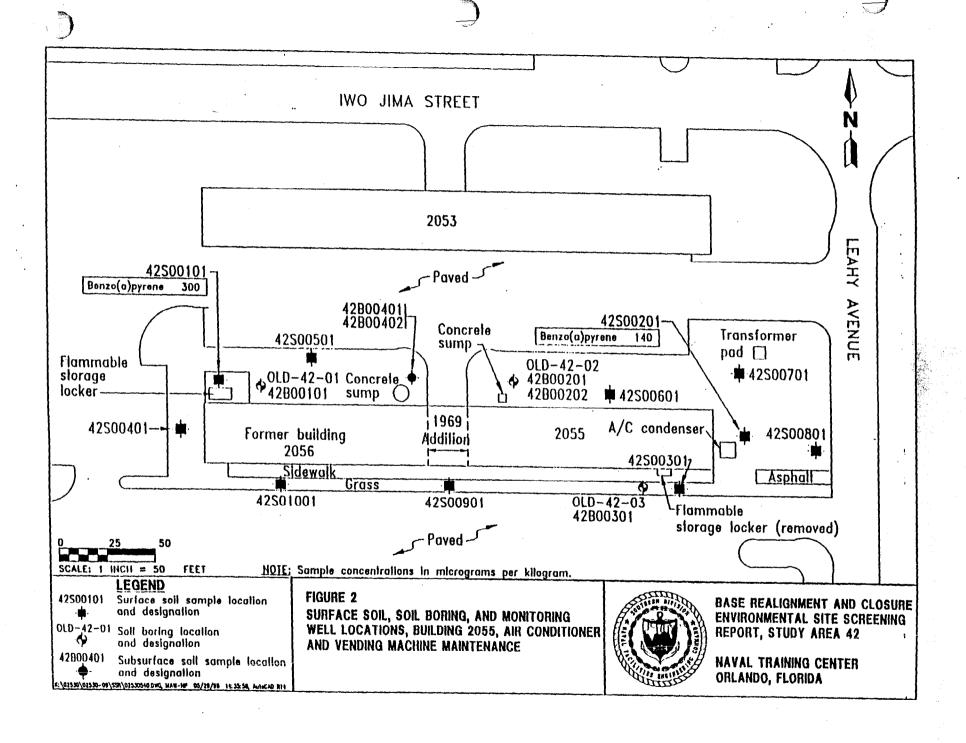
FIGURE 1 LOCATION OF STUDY AREA 42

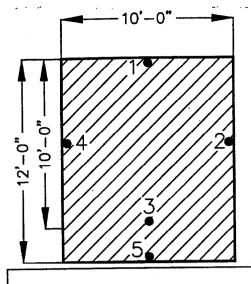


BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORT, STUDY AREA 42

NAVAL TRAINING CENTER ORLANDO, FLORIDA

R:\02530\02530-09\55R\02530532.0WC, MAW-MP 05/28/88 13:27:51, AutoCAD R14





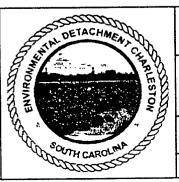
BUILDING 2056

LEGEND

- CONFIRMATORY SAMPLE ID 99SPORT0161-5
- CONFIRMATORY SAMPLE ID 99SPORT0161-6
- CONFIRMATORY SAMPLE ID 99SPORT0161-7
- CONFIRMATORY SAMPLE ID 99SPORT0161-8
- CONFIRMATORY SAMPLE ID 99SPORT0191-1



EXCAVATED TO 1 FOOT DEEP



ENVIRONMENTAL DETACHMENT CHARLESTON

1899 NORTH HOBSON AVENUE - BUILDING 30 NORTH CHARLESTON, SOUTH CAROLINA 29405-2106

FIGURE 3

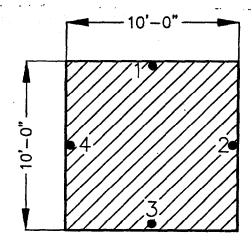
NAVAL TRAINING CENTER CENTER ORLANDO SA 42 **EXCAVATION BOUNDARIES AND** CONFIRMATORY SAMPLE LOCATIONS

PREPARED BY: REV DATE: 19 JULY 1999 A. J. MOYER

SHEET:

SCALE: NONE

N



LEGEND

● CONFIRMATORY SAMPLE ID 99SPORT0161-1

2 ● CONFIRMATORY SAMPLE ID 99SPORT0161-2

3 ● CONFIRMATORY SAMPLE ID 99SPORT0161-3

4 ● CONFIRMATORY SAMPLE ID 99SPORT0161-4

EXCAVATED TO 1 FOOT DEEP



ENVIRONMENTAL DETACHMENT CHARLESTON
1899 NORTH HOBSON AVENUE - BUILDING 30

NORTH CHARLESTON, SOUTH CAROLINA 29405-2106

FIGURE 4

NAVAL TRAINING CENTER CENTER ORLANDO SA 42
EXCAVATION BOUNDARIES AND
CONFIRMATORY SAMPLE LOCATIONS

DATE: PREPARED BY:

19 JULY 1999

A. J. MOYER

REV —

SCALE: NONE

SHEET:



SITE PHOTOGRAPHS

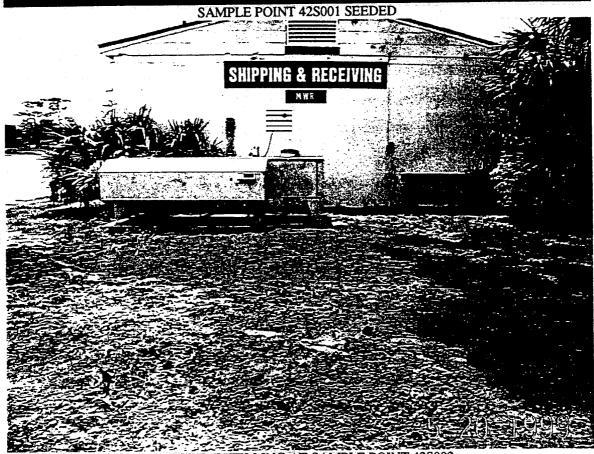


BEFORE EXCAVATION AT SAMPLE POINT42S001



AFTER BACKFILL AT SAMPLE POINT 42S001





AFTER BACKFILLING AT SAMPLE POINT 42S002



SAMPLE POINT 42S002 SEEDED

SAMPLING DOCUMENTATION

CONFIRMATION SAMPLES



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Laboratory Certifications

GEL EPI E87472/87-E87156/87294 2C N1 NC 233 79002 79002 10120 10582 02934 02934

Supervisor of Ship Building & Conversion

SUPSHIP-Portsmouth Detachment-Env.

1899 North Hobson Ave.

North Charleston, South Carolina 29405-2106

Contact:

Mr. Bill Hiers

Project Description:

SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: May 05, 1999

Page 1 of 2

Sample ID

: 99SPORT0161-5

Lab ID

: 9904953-05

Matrix

: Soil

Date Collected

: 04/29/99

Date Received

: 04/30/99

Priority

: Rush

Collector

: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst Date	Time	Batch M
Extractable Organics									
Polynuclear Aromatic H	ydrocarbons -	· 13 items							
Methylnaphthalene	U	ND	6.66	33.3	ug/kg	1.0	JPA 05/05/99	0934	148065 1
2-Methylnaphthalene	U	ND	6.66	33.3	ug/kg	1.0			
Acenaphthene	U	ND	6.66	33.3	ug/kg	1.0			
Acenaphthylene	j	31.7	6.66	33.3	ug/kg	1.0			
Anthracene	U	ND	6.66	33.3	ug/kg	1.0			
Benzo(a)anthracene		57.1	6.66	33.3	ug/kg	1.0			
Benzo(a)pyrene		92.8	6.66	33.3	ug/kg	1.0			
Benzo(b)fluoranthene		164	6.66	33.3	ug/kg	1.0			
Benzo(ghi)perylene	U	ND	6.66	33.3	ug/kg	1.0			
Benzo(k)fluoranthene		67.4	6.66	33.3	ug/kg	1.0			
Chrysene		126	6.66	33.3	ug/kg	1.0			
Dibenzo(a,h)anthracene	U	ND	26.6	33.3	ug/kg	1.0			
Fluoranthene		155	6.66	33.3	ug/kg	1.0			
Fluorene	U	ND	6.66	33.3	ug/kg	1.0			
Indeno(1.2.3-c,d)pyrene	· U	ND	23.3	33.3	ug/kg	1.0			
Naphthalene	U	ND .	6.66	33.3	ug/kg	1.0			
Phenanthrene		64.8	6.66	33.3	ug/kg	1.0			
Pyrene		226	6.66	33.3	ug/kg	1.0			

The following prep procedures were performed:

GC/MS Base/Neutral Compounds

CPU 05/04/99 1800 148065 2

Surrogate Recovery Test Percent % Acceptable Limits Fluorobiphenyl M610-5972 51.8 (44.7 - 110.)

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407

(843) 556-8171 • Fax (843) 766-1178



Printed on recycled paper.



9904953-05



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Laboratory Certifications

STATE GEL EPI FL E87156/87294 E87472/87 NC 233 NJ 79002 79002 SC 10120 10582 TN 02934 02934

Client:

Supervisor of Ship Building & Conversion

SUPSHIP-Portsmouth Detachment-Env.

1899 North Hobson Ave.

North Charleston, South Carolina 29405-2106

Contact:

Mr. Bill Hiers

Project Description:

SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: May 05, 1999

Page 2 of 2

Sample	w
--------	---

: 99SPORT0161-5

Surrogate Recovery	Test	Percent %	Acceptable Limits	
Nitrobenzene-d5	M610-5972	42.7	(42.4 - 107.)	
p-Terphenyl-d14	M610-5972	84.1	(45.5 - 104.)	

M = Method	Method-Description	
M 1	EPA 8270	
M 2	EPA 3550	

Notes:

The qualifiers in this report are defined as follows:

ND indicates that the analyte was not detected at a concentration greater than the detection limit.

J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

U indicates that the analyte was not detected at a concentration greater than the detection limit.

* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Elise Hanson at 843-556-8171.

Reviewed By



Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

 STATE
 GEL
 EPI

 FL
 E87156/87294
 E87472/874;

 NC
 233
 79002

 SC
 10120
 10582

 TN
 02934
 02934

Client:

Supervisor of Ship Building & Conversion

SUPSHIP-Portsmouth Detachment-Env.

1899 North Hobson Ave.

North Charleston, South Carolina 29405-2106

Contact:

Mr. Bill Hiers

Project Description:

SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: May 05, 1999

Page 1 of 2

Sample ID

: 99SPORT0161-6

Lab ID

: 9904953-06

Matrix

: Soil

Date Collected

: 04/29/99

Date Received

: 04/30/99

Priority

: Rush

Collector

: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Anal	yst Date	Time	Batch	M
Extractable Organics						<i></i>			· · · · · · · · · · · · · · · · · · ·		
Polynuclear Aromatic H		18 items									
:thyInaphthalene	U	ND	6.66	33.3	ug/kg	1.0	JPA	05/04/99	1628	14806	5 1
lethylnaphthalene	U	ND	6.66	33.3	ug/kg	1.0			.020	1 4000.	•
Acenaphthene	U	ND	6.66	33.3	ug/kg	1.0					
Acenaphthylene	U	ND	6.66	33.3	ug/kg	1.0					
Anthracene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(a)anthracene	J	25.6	6.66	33.3	ug/kg	1.0	•				
Benzo(a)pyrene		40.5	6.66	33.3	ug/kg	1.0					
Benzo(b)fluoranthene		79.9	6.66	33.3	ug/kg	1.0					
Benzo(ghi)perylene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(k)fluoranthene	J	30.2	6.66	33.3	ug/kg	1.0		_			
Chrysene		60.1	6.66	33.3	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	ND	26.6	33.3	ug/kg	1.0					
Fluoranthene		74.1	6.66	33.3	ug/kg	1.0					
Fluorene	U	ND	6.66	33.3	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	: U	ND	23.3	33.3	ug/kg	1.0					
Naphthalene	U	ND	6.66	33.3	ug/kg	1.0					
Phenanthrene		35.7	6.66	33.3	ug/kg	1.0					
Pyrene		102	6.66	33.3	ug/kg	1.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds

RDH 05/03/99 0800 148065 2

Surrogate Recovery Test		Percent %	Acceptable Limits	
orobiphenyl	M610-5972	52.5	(44.7 - 110.)	





9904953-06



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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client:

Supervisor of Ship Building & Conversion

SUPSHIP-Portsmouth Detachment-Env.

1899 North Hobson Ave.

North Charleston, South Carolina 29405-2106

Contact:

Mr. Bill Hiers

Project Description:

SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: May 05, 1999

Page 2 of 2

	Sample ID	: 99SPORT01	161-6	
Surrogate Recovery	Test	Percent %	Acceptable Limits	
Nitrobenzene-d5	M610-5972	47.8	(42.4 - 107.)	
p-Terphenyl-d14	M610-5972	71.8	(45.5 - 104.)	
•			,	

M = Method	Method-Description	
M 1	EPA 8270	
M 2	EPA 3550	

Notes:

The qualifiers in this report are defined as follows:

ND indicates that the analyte was not detected at a concentration greater than the detection limit.

J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

U indicates that the analyte was not detected at a concentration greater than the detection limit.

* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager. Elise Hanson at 843-556-8171.

Reviewed By



Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE GEL EPI FL E87156/87294 E87472/8745 NC NJ 233 79002 79002 SC TN 10120 10582 02934 02934

Client:

Supervisor of Ship Building & Conversion

SUPSHIP-Portsmouth Detachment-Env.

1899 North Hobson Ave.

North Charleston, South Carolina 29405-2106

Contact:

Mr. Bill Hiers

Project Description:

SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: May 05, 1999

Page 1 of 2

Sample ID

: 99SPORT0161-7

Lab ID Matrix

: 9904953-07

: Soil

Date Collected

: 04/29/99

Date Received

: 04/30/99

Priority Collector : Rush : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Anal	yst Date	Time	Batch	M
Extractable Organics					· · · · · · · · · · · · · · · · · · ·						
Polynuclear Aromatic H	lydrocarbons -	18 items									
Methylnaphthalene	U	ND	26.6	133	ug/kg	4.0	JPA	05/04/99	1655	14806	5 1
Methylnaphthalene	U	ND	26.6	133	ug/kg	4.0					
Acenaphthene	U	ND	26.6	133	ug/kg	4.0					
Acenaphthylene		166	26.6	133	ug/kg	4.0					
Anthracene	U	ND	26.6	133	ug/kg	4.0					
Benzo(a)anthracene		247	26.6	133	ug/kg	4.0					
Benzo(a)pyrene		456	26.6	133	ug/kg	4.0					
Benzo(b)fluoranthene		778	26.6	133	ug/kg	4.0					
Benzo(ghi)perylene	U	ND	26.6	133	ug/kg	4.0					
Benzo(k)fluoranthene		283	26.6	133	ug/kg	4.0					
Chrysene		529	26.6	33.3	ug/kg	4.0					
Dibenzo(a.h)anthracene	U	ND	107	133	ug/kg	4.0					
Fluoranthene		604	26.6	133	ug/kg	4.0					
Fluorene	U	ND	26.6	133	ug/kg	4.0					
Indeno(1,2,3-c,d)pyrene	: U	ND	93.2	133	ug/kg	4.0					
Naphthalene	U ·	ND	26.6	133	ug∕kg	4.0					
Phenanthrene		159	26.6	133	ug/kg	4.0					
Pyrene		871	26.6	133	ug/kg	4.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds

RDH 05/03/99 0800 148065 2

Surrogate Recovery Test Percent% Acceptable Limits Juorobiphenyl M610-5972 57.3 (44.7 - 110.)

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9904953-07



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Laboratory Certifications

STATE	GEL	EP1
FL	E87156/87294	E87472/8
NC	233	
NJ.	79002	79002
SC	10120	10582
IN	02934	02934

Client:

Supervisor of Ship Building & Conversion

SUPSHIP-Portsmouth Detachment-Env.

1899 North Hobson Ave.

North Charleston, South Carolina 29405-2106

Contact:

Mr. Bill Hiers

Project Description:

SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: May 05, 1999

Page 2 of 2

Sample ID		: 99SPORT01	161-7	
Surrogate Recovery	Test	Percent %	Acceptable Limits	
Nitrobenzene-d5	M610-5972	44.4	(42.4 - 107.)	
p-Terphenyl-d14	M610-5972	80.7	(45.5 - 104.)	

M = Method	Method-Description	
M 1	EPA 8270	
M 2	EPA 3550	

Notes:

The qualifiers in this report are defined as follows:

ND indicates that the analyte was not detected at a concentration greater than the detection limit.

J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

U indicates that the analyte was not detected at a concentration greater than the detection limit.

* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Elise Hanson at 843-556-8171.

Reviewed By



Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE GEL FL NI SUT E87156/87294 E87472/8 233 79002 79002 10120 02934 10582 02934

Client:

Supervisor of Ship Building & Conversion

SUPSHIP-Portsmouth Detachment-Env.

1899 North Hobson Ave.

North Charleston, South Carolina 29405-2106

Contact:

Mr. Bill Hiers

Project Description:

SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: May 05, 1999

Page 1 of 2

Sample ID

: 99SPORT0161-8

Lab ID Matrix

: 9904953-08

: Soil

Date Collected

: 04/29/99

Date Received

: 04/30/99

Priority

: Rush

Collector

: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Anal	yst Date	Time	Batch	M
Extractable Organics											
Polynuclear Aromatic F		· 18 items									
1ethylnaphthalene	U	ND	26.6	133	ug/kg	4.0	JPA	05/04/99	1722	14806	5
ethylnaphthalene	U	ND	26.6	133	ug/kg	4.0		00.0		14000	٠.
Acenaphthene	U	ND	26.6	133	ug/kg	4.0					
Acenaphthylene	U	ND	26.6	133	ug/kg	4.0					
Anthracene	j	66.9	26.6	133	ug/kg	4.0					
Benzo(a)anthracene	J	106	26.6	133	ug/kg	4.0					
Benzo(a)pyrene	J	86.6	26.6	133	ug/kg	4.0					
Benzo(b)fluoranthene		152	26.6	133	ug/kg	4.0					
Benzo(ghi)perylene	U	ND	26.6	133	ug/kg	4.0					
Benzo(k)fluoranthene	U	ND	26.6	133	ug/kg	4.0					
Chrysene		110	26.6	33.3	ug/kg	4.0					
Dibenzo(a,h)anthracene	U	ND	107	133	ug/kg	4.0					
Fluoranthene		140	26.6	133	ug/kg	4.0					
Fluorene	U	ND	26.6	133	ug/kg	4.0					
Indeno(1,2,3-c,d)pyrene	U	ND	93.2	133	ug/kg	4.0					
Naphthalene	U	•ND	26.6	133	ug/kg	4.0					
Phenanthrene	U	ND	26.6	133	ug/kg	4.0					
Pyrene		190	26.6	133	ug/kg	4.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds

RDH 05/03/99 0800 148065 2

Surrogate Recovery	Test	Percent %	Acceptable Limite-	
orobiphenyl	M610-5972	52.4	(44.7 - 110.)	· · · · · · · · · · · · · · · · · · ·

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9904953-08



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Laboratory Certifications

STATE GEL EPI FL E87156/87294 E87472/874 NC 233 NJ 79002 79002 SC 10120 10582 TN 02934 02934

Client:

Supervisor of Ship Building & Conversion

SUPSHIP-Portsmouth Detachment-Env.

1899 North Hobson Ave.

North Charleston, South Carolina 29405-2106

Contact:

Mr. Bill Hiers

Project Description:

SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: May 05, 1999

Page 2 of 2

	Sample ID	: 99SPORT01	61-8	
Surrogate Recovery	Test	Percent %	Acceptable Limits	
Nitrobenzene-d5	M610-5972	44.0	(42.4 - 107.)	
p-Terphenyl-d14	M610-5972	81.0	(45.5 - 104.)	

M = Method	Method-Description	
M I	EPA 8270	
M 2	EPA 3550	

.votes:

The qualifiers in this report are defined as follows:

ND indicates that the analyte was not detected at a concentration greater than the detection limit.

I indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

U indicates that the analyte was not detected at a concentration greater than the detection limit.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Elise Hanson at 843-556-8171.

Reviewed By

^{*} indicates that a quality control analyte recovery is outside of specified acceptance criteria.

- 3. DAY TURI) ROUND .-

Page____of__2

CHAIN OF CUSTODY RECORD

General Engineering Lab Jes, Inc 2040 Savage Road Charleston, South Carolin. 607 P.O. Box 30712 Charleston, South Carolina 29417 (803) 556-8171

Client Name/Facility Name SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods NTC ORlando SA42437 Use F or P in the boxes to indicate whether sample was filtered and/or preserved Collected by/Company
ENV DET Chash Acid Extractabl Coliform type Cyanide SAMPLE ID DATE TIME Remarks 995port 0/6/-1 /29/99 /300 SA 425002 Location 1/09/99 1310 1/29/99 1325 925port 0161-5 1/29/99 SA425001 GOCATION 98Sport 0161-6 4/29/99 14/30 Field Bbak SA-42500 1 Kootion SA 42 F-0161-9 SA-37 Location 1/29/99 1500 925port 0161-11 72Sport 0161-12 179/99 1509 Relinquished by: Received by: The much poule mille elle 4/3/89 1145 1-20-19/145 White = s collector Yellow = file Pink = with report

CHAIN OF CUSTODY RECORD

General Engineering Lab Ges, Inc. 2040 Savage Road Charleston, South Carolin. 407 P.O. Box 30712 Charleston, South Carolina 29417

Page 2 of 2 (803) 556-8171 SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods Client Name/Facility Name Use F or P in the boxes to indicate whether NTC ORlando SA-42+37
Collected by Company
ENV DET Chasu sample was filtered and/or preserved TOC/DOC
TOX
Chloride, Fluoride,
Sulfide METALS - specify Total Phenol PCB's Remarks DATE TIME SAMPLE ID 998port 0/6/-14 4/29/99 1525 SA-37 Location Date: Time: Received by:

| Date: Time: Received by lab by: Relinquished by: Received by: Date: Time: 4/30/80 1/43 Time: Remarks:

Pink = with report

collector

White = :

Yellow = file



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Laboratory Certifications

STATE	GEL.	EPI
FL.	E87156/87294	E87472/87
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client:

Supervisor of Ship Building & Conversion

SUPSHIP-Portsmouth Detachment-Env.

1899 North Hobson Ave.

North Charleston, South Carolina 29405-2106

Contact:

Mr. Bill Hiers

Project Description:

SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: May 21, 1999

Page 1 of 2

Sample ID Lab ID

: 99SPORT0191-1

Matrix

: 9905674-01

: Soil

Date Collected

: 05/19/99

Date Received

: 05/20/99

Priority Collector : Urgent : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Ana	yst Date	Time	Batch	M
Extractable Organics											
Dolynuclear Aromatic H		· 16 items									
cenaphthene	U	ND	630	1310	ug/kg	4.0	JPA	05/21/99	1041	149649) 1
Acenaphthylene	U	ND	577	1310	ug/kg	4.0					
Anthracene	ប	ND	341	1310	ug/kg	4.0					
Benzo(a)anthracene	U	ND	262	1310	ug/kg	4.0					
Benzo(a)pyrene	U	ND	289	1310	ug/kg	4.0					
Benzo(b)fluoranthene	Ü	ND	564	1310	ug/kg	4.0					
Benzo(ghi)perylene	U	ND	315	1310	ug/kg	4.0					
Benzo(k)fluoranthene	U	ND	525	1310	ug/kg	4.0					
Chrysene	U	ND	210	1310	ug/kg	4.0					
Dibenzo(a.h)anthracene	U	ND	328	1310	ug/kg	4.0					
Fluoranthene	U	ND	262	1310	ug/kg	4.0					
Fluorene	ប	ND	446	1310	ug/kg	4.0					
Indeno(1,2,3-c,d)pyrene	U	ND	315	1310	ug/kg	4.0					
Naphthalene	U	ND	617	1310	ug/kg	4.0					
Phenanthrene	U	ND	236	1310	ug/kg	4.0		•			
Pyrene	Ū	ND	289	1310	ug/kg	4.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds

AEJ 05/20/99 1700 149649 2

Surrogate Recovery	Test	Percent%	Acceptable Limits	
2-Fluorobiphenyl	M610	65.2	(44.7 - 110.)	
robenzene-d5	M610	56.0	(42.4 - 107.)	
erphenyl-d14	M610	80.6	(45.5 - 104.)	

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9905674-01



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Laboratory Certifications

STATE GEL E87156/87294 E87472/87: NC 233 NJ 79002 79002 SC TN 10120 10582 02934 02934

Client:

Supervisor of Ship Building & Conversion

SUPSHIP-Portsmouth Detachment-Env.

1899 North Hobson Ave.

North Charleston, South Carolina 29405-2106

Contact:

Mr. Bill Hiers

Project Description:

SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: May 21, 1999

Page 2 of 2

Sample ID

: 99SPORT0191-1

Surrogate Recovery

Test

Percent%

Acceptable Limits

M = Method	Method-Description		
M 1	EPA 8270C		
M 2	EPA 3550	•	

Notes:

The qualifiers in this report are defined as follows:

ND indicates that the analyte was not detected at a concentration greater than the detection limit.

J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

U indicates that the analyte was not detected at a concentration greater than the detection limit.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Elise Hanson at 843-556-8171.



^{*} indicates that a quality control analyte recovery is outside of specified acceptance criteria.

) PWC00197
Page_____ of ____

990.) 74%

CHAIN OF CUSTODY RECORD

General Engineering I ries, Inc 2040 Savage Road Charleston, South Carolina 29407 P.O. Box 30712 Charleston, South Carolina 29417 (803) 556.8171

Client Name/Fac	ility Name					Т		SA	MPLE	ANAL	YSIS	DEOU	IDED	(=\		·								(803) 556-817	uin Carolina 2941) I
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Laboratory Certifications

 STATE
 GEL
 EPI

 FL
 E87156/87294
 E87472/874

 NC
 233
 79002
 79002

 SC
 10120
 10582

 TN
 02934
 02934

Client:

Supervisor of Ship Building & Conversion

SUPSHIP-Portsmouth Detachment-Env.

1899 North Hobson Ave.

North Charleston, South Carolina 29405-2106

Contact:

Mr. Bill Hiers

Project Description:

SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: May 05, 1999

Page 1 of 2

Sample ID

: 99SPORT0161-1

Lab ID

: 9904953-01

Matrix

: Soil

Date Collected

: 04/29/99

Date Received

: 04/30/99

Priority

: Rush

Collector

: Client

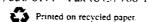
Parameter	Qualifier	Result		DL	RL	Units	DF	Anal	yst Date	Time	Batch	M
Extractable Organics											· ······	·
Polynuclear Aromatic H	lydrocarbons -	- 18 items										. 6
-Methylnaphthalene	Ü	ND		6.66	33.3	ug/kg	1.0	JPA	05/05/99	0906	148065	1
2-Methylnaphthalene	U	ND		6.66	33.3	ug/kg	1.0					
Acenaphthene	U	ND		6.66	33.3	ug/kg	1.0					
Acenaphthylene	U	ND		6.66	33.3	ug/kg	1.0					
Anthracene	U	ND		6.66	33.3	ug/kg	1.0				•	
Benzo(a)anthracene	U	ND		6.66	33.3	ug/kg	1.0					
Benzo(a)pyrene	U	ND		6.66	33.3	ug/kg	1.0					
Benzo(b)fluoranthene	J	20.4		6.66	33.3	ug/kg	1.0					
Benzo(ghi)perylene	U	ND		6.66	33.3	ug/kg	1.0					,
Benzo(k)fluoranthene	J	18.1		6.66	33.3	ug/kg	1.0					
Chrysene	J	18.1	``	6.66	33.3	ug/kg	1.0					
Dibenzo(a,h)anthracene	u U	ND		26.6	33.3	ug/kg	1.0					
Fluoranthene	J	17.2		6.66	33.3	ug/kg	1.0					
Fluorene	U	ND		6.66	33.3	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	e U	ND		23.3	33.3	ug/kg	1.0					
Naphthalene	U	ND		6.66	33.3	ug/kg	1.0					•
Phenanthrene	U	ND		6.66	33.3	ug/kg	1.0					
Pyrene	J	18.6		6.66	33.3	ug/kg	1.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds

CPU 05/04/99 1800 148065 2

Surrogate Recovery	Test	Percent %	Acceptable Limits
Fluorobiphenyl	M610-5972	48.4	(44.7 - 110.)





Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client:

Supervisor of Ship Building & Conversion

SUPSHIP-Portsmouth Detachment-Env.

1899 North Hobson Ave.

North Charleston, South Carolina 29405-2106

Contact:

Mr. Bill Hiers

Project Description:

SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: May 05, 1999

Page 2 of 2

	Sample ID	: 99SPORT01	161-1	
Surrogate Recovery	Test	Percent %	Acceptable Limits	
Nitrobenzene-d5	M610-5972	47.4	(42.4 - 107.)	,
p-Terphenyl-d14	M610-5972	84.3	(45.5 - 104.)	

M = Method	Method-Description	
M 1 M 2	EPA 8270 EPA 3550	

Notes:

The qualifiers in this report are defined as follows:

ND indicates that the analyte was not detected at a concentration greater than the detection limit.

I indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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Reviewed By

^{*} indicates that a quality control analyte recovery is outside of specified acceptance criteria.



Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

 STATE
 GEL
 EPI

 FL
 E87156/87294
 E87472/874

 NC
 233
 79002

 NJ
 79002
 10582

 TN
 02934
 02934

Client:

Supervisor of Ship Building & Conversion

 $SUPSHIP\text{-}Portsmouth\ Detachment\text{-}Env.$

1899 North Hobson Ave.

North Charleston, South Carolina 29405-2106

Contact:

Mr. Bill Hiers

Project Description:

SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: May 05, 1999

Page 1 of 2

Sample ID

: 99SPORT0161-2

Lab ID

: 9904953-02

Matrix

: Soil

Date Collected

: 04/29/99

Date Received

: 04/30/99

Priority

: Rush

Collector

: Client

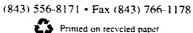
Parameter	Qualifier	Result	DL	RL	Units	DF	Anai	yst Date	Time	Batch M
Extractable Organics									· · · · · · · · · · · · · · · · · · ·	
Polynuclea: Aromatic H	ydrocarbons -	- 18 items								
Methylnaphthalene	U	ND	6.66	33.3	ug/kg	1.0	JPA	05/04/99	1438	148065 1
∠-Methylnaphthalene	U	ND	6.66	33.3	ug/kg	1.0				
Acenaphthene	U	ND	6.66	33.3	ug/kg	1.0				
Acenaphthylene	U	ND	6.66	33.3	ug/kg	1.0				
Anthracene	U	ND	6.66	33.3	ug/kg	1.0				
Benzo(a)anthracene	U	ND	6.66	33.3	ug/kg	1.0				
Benzo(a)pyrene	Ū	ND	6.66	33.3	ug/kg	1.0				
Benzo(b)fluoranthene	J	24.7	6.66	33.3	ug/kg	1.0				
Benzo(ghi)perylene	υ	ND	6.66	33.3	ug/kg	1.0				
Benzo(k)fluoranthene	U	ND	6.66	33.3	ug/kg	1.0				
Chrysene	U	ND	ì 6.66	33.3	ug/kg	1.0				
Dibenzo(a.h)anthracene	U	ND	26.6	33.3	ug/kg	1.0				
Fluoranthene	J	18.2	6.66	33.3	ug/kg	. 1.0				
Fluorene	U	ND	6.66	33.3	ug/kg	1.0				
Indeno(1,2,3-c,d)pyrene	U	ND	23.3	33.3	ug/kg	1.0				
Naphthalene	U	ND	6.66	33.3	ug/kg	1.0				
Phenanthrene	U	. ND	6.66	33.3	ug/kg	1.0				
Pyrene	j	18.9	6.66	33.3	ug/kg	1.0				

The following prep procedures were performed:

GC/MS Base/Neutral Compounds

RDH 05/03/99 0800 148065 2

Surrogate Recovery	Test	Percent%	Acceptable Limits
luorobiphenyl	M610-5972	54.4	(44.7 - 110.)





Meeting today's needs with a vision for tomorrow.

STATE	GEL	EPI
FL	E87156/87294	E87472/874
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client:

Supervisor of Ship Building & Conversion

SUPSHIP-Portsmouth Detachment-Env.

1899 North Hobson Ave.

North Charleston. South Carolina 29405-2106

Contact:

Mr. Bill Hiers

Project Description:

SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: May 05, 1999

Page 2 of 2

	Sample ID	: 99SPORT01	161-2	
Surrogate Recovery	Test	Percent%	Acceptable Limits	
Nitrobenzene-d5	M610-5972	52.9	(42.4 - 107.)	
p-Terphenyl-d14	M610-5972	77.6	(45.5 - 104.)	

M = Method	Method-Description	
M 1 M 2	EPA 8270 EPA 3550	



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Reviewed By

^{*} indicates that a quality control analyte recovery is outside of specified acceptance criteria.



Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE GEL F 0 7 5 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 E87156/87294 E87472/87 79002 79002 10120 10582 02934 02934

Client:

Supervisor of Ship Building & Conversion

SUPSHIP-Portsmouth Detachment-Env.

1899 North Hobson Ave.

North Charleston, South Carolina 29405-2106

Contact:

Mr. Bill Hiers

Project Description:

SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: May 05, 1999

Page 1 of 2

Sample ID Lab ID

: 99SPORT0161-3

Matrix

: 9904953-03

: Soil

Date Collected

: 04/29/99

Date Received

: 04/30/99

Priority

: Rush

Collector

: Client

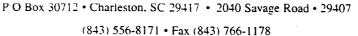
Parameter	Qualifier	Result		DL	RL	Units	DF	Anai	yst Date	Time	Batch	M
Extractable Organics										·		
Polynuclear Aromatic H	lydroc <mark>arbons</mark> -	- 18 items										
-Methylnaphthalene	U	ND		6.66	33.3	ug/kg	1.0	JPA	05/04/99	1505	148065	5 1
∠-Methylnaphthalene	U	ND		6.66	33.3	ug/kg	1.0		•			
Acenaphthene	U	ND		6.66	33.3	ug/kg	1.0					
Acenaphthylene	U	ND		6.66	33.3	ug/kg	1.0					
Anthracene	U	ND		6.66	33.3	ug/kg	1.0					
Benzo(a)anthracene	U	ND		6.66	33.3	ug/kg	1.0					
Benzo(a)pyrene	U	ND		6.66	33.3	ug/kg	1.0					
Benzo(b)fluoranthene	J	21.1		6.66	33.3	ug/kg	1.0					
Benzo(ghi)perylene	U	ND		6.66	33.3	ug/kg	1.0					
Benzo(k)fluoranthene	U	ND		6.66	33.3	ug/kg	1.0					
Chrysene	U	ND	ì	6.66	33.3	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	ND		26.6	33.3	ug/kg	1.0					
Fluoranthene	U	ND		6.66	33.3	ug/kg	1.0					
Fluorene	U	ND		6.66	33.3	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	e U	ND		23.3	33.3	ug/kg	1.0					
Naphthalene	U	ND		6.66	33.3	ug/kg	1.0					
Phenanthrene	U	ND		6.66	33.3	ug/kg	1.0			•		
Pyrene	U	ND		6.66	33.3	ug/kg	1.0					

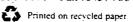
The following prep procedures were performed:

GC/MS Base/Neutral Compounds

RDH 05/03/99 0800 148065 2

Surrogate Recovery	Test	Percent%	Acceptable Limits	
Fluorobiphenyl	M610-5972	62.8	(44.7 - 110.)	







9904953-03



Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE GEL EPI FL E87156/87294 E87472/874 NC 233 NJ 79002 79002 SC 10120 10582 TN 02934 02934

Client:

Supervisor of Ship Building & Conversion

SUPSHIP-Portsmouth Detachment-Env.

1899 North Hobson Ave.

North Charleston, South Carolina 29405-2106

Contact:

Mr. Bill Hiers

Project Description:

SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: May 05, 1999

Page 2 of 2

Sample ID		: 99SPORT01	161-3	
Surrogate Recovery	Test	Percent %	Acceptable Limits	
Nitrobenzene-d5	M610-5972	61.6	(42.4 - 107.)	
p-Terphenyl-d14	M610-5972	79.7	(45.5 - 104.)	

M = Method	Method Decemention	 	
III – Memod	Method-Description	 . At 100	
M 1	EPA 8270		
M 2	EPA 3550		

Notes:

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Reviewed By

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Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client:

Supervisor of Ship Building & Conversion

SUPSHIP-Portsmouth Detachment-Env.

1899 North Hobson Ave.

North Charleston, South Carolina 29405-2106

Contact:

Mr. Bill Hiers

Project Description:

SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: May 05, 1999

Page 1 of 2

Sample ID

: 99SPORT0161-4

Lab ID

: 9904953-04

Matrix

: Soil

Date Collected

: 04/29/99

Date Received

: 04/30/99

Priority

: Rush

Collector

: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analys	t Date	Time	Batch 1	M
Extractable Organics											
Polynuclear Aromatic H	lydrocarbons -	· 18 items									
-Methylnaphthalene	U	ND	6.66	33.3	ug/kg	1.0	JPA	05/04/59	1533	148065	1
2-Methylnaphthalene	U	ND	6.66	33.3	ug/kg	1.0					
Acenaphthene	U	ND	6.66	33.3	ug/kg	1.0					
Acenaphthylene	U	ND	6.66	33.3	ug/kg	1.0					
Anthracene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(a)anthracene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(a)pyrene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(b)fluoranthene	J	27.9	6.66	33.3	ug/kg	1.0					
Benzo(ghi)perylene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(k)fluoranthene	U	ND	6.66	33.3	ug/kg	1.0	_				
Chrysene	J	18.7	6.66	33.3	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	ND	26.6	33.3	ug/kg	1.0					
Fluoranthene	U	ND	6.66	33.3	ug/kg	1.0					
Fluorene	U	ND	6.66	33.3	ug/kg	1.0					
Indeno(1,2,3-c.d)pyrene	· U	ND	23.3	33.3	ug/kg	1.0					
Naphthalene	U	ND	6.66	33.3	ug/kg	1.0					
Phenanthrene	U	ND	6.66	33.3	ug/kg	1.0			•		
Pyrene	J	18.8	6.66	33.3	ug/kg	1.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds

RDH 05/03/99 0800 148065 2

Surrogate Recovery	Test	Percent%	Acceptable Limits	
Fluorobiphenyl	M610-5972	61.4	(44.7 - 110.)	



(843) 556-8171 • Fax (843) 766-1178



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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client:

Supervisor of Ship Building & Conversion

SUPSHIP-Portsmouth Detachment-Env.

1899 North Hobson Ave.

North Charleston, South Carolina 29405-2106

Contact:

Mr. Bill Hiers

Project Description:

SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: May 05, 1999

Page 2 of 2

	Sample ID	: 99SPORTO	61-4	
Surrogate Recovery	Test	Percent%	Acceptable Limits	
Nitrobenzene-d5	M610-5972	60.4	(42.4 - 107.)	The state of the s
p-Terphenyl-d14	M610-5972	74.6	(45.5 - 104.)	

M = Method	Method-Description	
M 1 M 2	EPA 8270	
IVI 2	EPA 3550	

Notes:

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Reviewed By

^{*} indicates that a quality control analyte recovery is outside of specified acceptance criteria.

- 3- DAY TURA AROUND -

CHAIN OF CUSTODY RECORD

Page / of _2_

General Engineering Labilities, Inc. 2040 Savage Road Charleston, South Carolin. 407 P.O. Box 30712 Charleston, South Carolina 29417 (803) 556-8171

Client Name/Facility N	ame				T _s	H	SAN	IPLE /	ANAL	YSIS	REQU	IRED	(x) - us	e rema	rks area	to spec	ily spec	ific cor	himmelit	s or me	thixls	Use F or P in the boxes to indicate was sample was filtered and/or preser	
NTC ORIGIN	100 51	9424.	3'	<u>Z</u>	CONTAINERS	vity			oride,	يو	ired	ectiv	20			ables	bles			ecify	0		
ENU DET	Chasa	J	1 1	1.1.	CONT	nducti	200		Chloride, Fluoride Sulfide	Nitrite/Nitrate	Specif d requ	METALS - specif	8	ide	Total Phenol	Acid Extractabl	B/N Extractable		1	ds - E	1830		
SAMPLE ID	DATE	TIME	WELL	COMP	# 0F	pH, co	TOCADOC	τοχ	Chlori	Nitzi	VOC - Specify Method required	META	Pestici	Herbicide	Total	Acid E	BAN E	PCB's	Cyanide	Coliform - specify type	Kak	Remarks	•
79Sport 0161-1	4/29/99	1300	x	X	1																X	SA 425002 Locati	بهمر
79Sport 0/61-2.	1/29/99	1310	X	X	1																X	1	
79.Spoit 0/61-3	1/29/99	1325	X	X	1																χ		•
195port 0161-1 195port 0161-2 195port 0161-3 195port 0161-4	1/29/99	1335	X	X	1																χ		·
985port 0161-5	4/29/99	1400	Х	X	1																X	SA425001 LOCAT	462
79.Sport 0161-6			X	K	1																X		
99Sport 0/61-7	4/29/99	1420	Х	X	1														,-		X		ţ
995port 0/61-7 195port 0/61-8	4/29/99	1430	X	X	1																X	·	:
995port 0161-9	4/21/99	1435	χ		2																X	Field 8bak 5A-428 5A 42 F-0161-4	, г
925port 0161-10	1 ./ /	1	X	X	1								χ			:						SA-37 Location	
75port 0161-11	4/29/99	1500	X	X	1								Χ										
25 port 0/6/- 12	4/29/99	1509	X	X	1								X										
795port 0161-13	4/29/99	1517	X	X	1								X										
Relinquished by:	,	Date 4/29/99	192	X) GA	1	ived b	•	4	D 9	uk	20	2	Relin	quish	ed by:	p. z	l.	L	_		Date 4/2	Time: Received by:	
Relinquished by:		Daty:	Time	:	Rece	lv-s b	y lab l	by:	()	~			Date:	:	Tim	t:		arks:)

- 3 DAY TU DAROUND -

CHAIN OF CUSTODY RECORD

Page 2 of 2

General Engineering Lab (2040 Savage Road) Charleston, South Carolin. P.O. Box 30712 Charleston, South Carolina 29417 (803) 556-8171

Client Name/Facility	Same	·			\top	$\overline{1}$	SAI	MPLE	ANAI	YSIS	REOL	IREIN	(v)										(00.			ì	
NTC ORland Collected by/Company	ndo si	4-42,	121	7	SS SS		II						1 1	se tema	irks area	to spe	II) spe	Lilie co	mpoun	ds or m	ethods	11	 	Use For Pig	the boxes to	o indicate wh d/pr preserve	nether
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ENV DET	Chash	1			Į Ž	luctiv	Ų		E S	itrate	Secily equity	8	2		2	actab	ctab		Ì	specify						•	
SAMPLE ID	DATE	TIME	YELL	OIL	GRAB # OF CONTAINERS	pH. conductivity	TOC/DOC	xo.	Chloride, Fluoride, Sulfide	itrite/N	OC . Sp	METALS - specify	sticide	erbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform .							
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hite = e collec	ctor Ye	ellow = file			1k = v					-	<u> </u>	,	<u>ب</u>	·· Y /	7												

WASTE CHARACTERIZATION

ENCO LABORATORIES

REPORT #

: OR6327A DATE REPORTED: April 30, 1999

. PROJECT NAME : NTC-Orlando

PAGE 7 OF 13

RESULTS OF ANALYSIS

TOT D	1/77077				
	METALS	METHOD	SA-42002	SA-42001	Units
	Arsenic Analyzed	1311/7060	0.050 U 04/23/99	0.050 U 04/23/99	mg/L
	Barium Analyzed	1311/7080	2.0 U 04/23/99	2.0 U 04/23/99	mg/L
	Cadmium Analyzed	1311/7130	0.10 U 04/23/99	0.10 U 04/23/99	mg/L
	Chromium Analyzed	1311/7190	0.50 U 04/23/99	0.50 U 04/23/99	mg/L
Dace A	Lead Analyzed	1311/7420	0.50 U 04/23/99	0.50 U 04/23/99	mg/L
TCLP M	Mercury Analyzed	1311/7470	0.0050 U 04/26/99	0.0050 U 04/26/99	mg/L
	Selenium Snalyzed	1311/7740	0.050 U 04/25/99	0.050 U 04/25/99	mg/L
TCLP S Date A	ilver nalyzed	1311/7760	0.20 U 04/23/99	0.20 U 04/23/99	mg/L

Compound was analyzed for but not detected to the level shown.

QSARF	#
-------	---



ENVIRONMENTAL CONSERVATION LABORATORIES

4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069

10207 General Drive Orlando, Florida 32824

Ph. (904) 296-3007 • Fax (904) 296-6210

Ph. (407) 826-5314 • Fax (407) 850-6945

ENCO CompQAP No.: 960038G/0 CHAIN OF CUSTODY RECORD

PROJECT REFERENCE	PROJECT NO. PO. NUMBER		REQUIRED ANALYSIS PAG	SE OF
NTC ORlando		MATRIX TYPE	The defined with the second	
PROJECT LOC. SAMPLER(s) NAME (State)	PHONE 496-2173	'	Ly/ 3 / / / / /	STANDARD REPORT DELIVERY
FL K. Cope	FAX SUET - 5468 -		Date Due	L DELIVERY
ENV DET CLASH	CLIENT PROJECT MANAGER		\$\@\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	EXPEDITED REPORT DELIVERY (surcharge)
CLIENT ADDRESS (CITY, STATE, ZIP)	29405 [5]		a'/ a'/ / / / / / / L	DELIVERY (surcharge)
CLIENT ADDRESS (CITY, STATE, ZIP) 1899 N. Hobson Ace	N. Charleston SC 3/3		Date Due	
SAMPLE				
STATION DATE TIME GRAB	COMP SAMPLE IDENTIFICATION	WASTEWATER DRINKING WATER SOLUSOLOUDER AIR SLUGE OTHER	NUMBER OF CONTAINERS SUBMITTED	REMARKS
		V		
1 1/20/99 1450 X	SA-35009			
2 1/30/99 1505 X	SA 350/3			
3 72/99 1540 X	SA-35015			
1 //20/99 /640	X SA 80001		X- TCAP Pesticides Requested 5 Locar	ions Area A
5 724/59 700	X SA-80002			ons Alea B
		++/+++	<u> </u>	ons Area C
6 7/26/99 1770	X 54.80003		 	<u> </u>
1 /21/99 1010 X	SA-42002		<u> </u>	
8 4/21/99 1022 X	5A-42001	1		
, 4/4/99 1/20 X			ma Coy	Annex
1/21/22 11/5	X SA-18008		1 1 5/	Cocations
		- 	1 1 5 1	ocations
11 4/21/99 1201	X SA-17035			CAHORS
12				
13				
SAMPLE KIT PREPARED BY	DATE / TIME RELINGUISPED BY: (SIGN	ATURE) D	ATE TIME RECEIVED BY: (SIGNATURE)	DATE TIME
DJACKSONVILLE BORLANDO		de		
RELINQUISHED BY: (SIGNATURE)	DATE TIME RECEIVED BY: (SIGNATUR	9 9	ATE TIME RELINQUISHED BY: (SIGNATURE)	DATE TIME
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